

## **CENTRE AGRO-ENTREPRISE**

Mali Sustainable Economic Growth

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### **ANNUAL REPORT – SECOND YEAR (1999 – 2000)**

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## Summary

At the end of the second year of operations, the results achieved by the Centre Agro Entreprise (CAE) show its work on the development of agribusiness commodity subsectors getting well into its stride. Businesses have been provided with well-targeted assistance to help support those activities undertaken to promote the products of the various subsectors concerned. The results achieved by the Center in terms of improvements in the processing and marketing of agricultural produce represent the intermediate results of the SEG program and are presented below.

### THE DEVELOPMENT OF AGRIBUSINESS SUBSECTORS

1. ***Rice :** A trial was carried in the Office du Niger zone on the production of superior quality white rice, starting with 160 tons of paddy :*
  - processing with four small rice-hullers coupled with graders to obtain different qualities of rice (Whole Long White, Broken etc.) ;
  - packing of processed rice in 50 and 25 kg sacks labeled with the quality (Whole - Broken) ;
  - distribution of the 100 tons of higher quality rice produced in the trial through the markets of Niono, Ségou town and Bamako ;
  - raising artisan rice-millers' awareness of the quality achievable through the appropriate use of technology.
2. **Air-freighted mango :** The Center has supported the export to the United Kingdom of 42 tons of mango air-freighted from Bamako by a pool of Bamako exporters, to the satisfaction of the British clients (Unique Fresh Produce, Paul's Fruit & Veg. and Redbridge).
3. **Sea-freighted mango :** The Center has also assisted another exporters' pool at Sikasso in order to promote mango export by sea, a pilot project in which a local financial institution (Crédit Initiative SA) was heavily involved. This led to the export of 246 tons of mango from Sikasso.
4. **Promotion of Malian mango on the European market :** Other promotional assistance by the Center raised awareness of Malian mango in the British market, where importers expressed great interest. This interest on the part of British importers was reinforced by the Center's organizing in October a marketing tour for the exporters of the Bamako pool, taking in the UK, Holland, Germany and France.
5. **The campaign against the mango fruit fly :** Attacks by the mango fruit fly are a real threat to Malian mango intended for export. In collaboration with the CIRAD and the IER, the Center has set up an integrated anti-fruit-fly campaign ; the first phase of work led to the identification of four species of fruit fly present in the mango orchards. The three zones studied were Bamako, Sikasso and Bougouni. Estimates of damage to mango varieties Kent and Keitt range between 30 and 48% in non-treated orchards at Madina in the Bougouni Region. Estimates of the

rate of damage at the same location after spot treatment range between 9% and 28% for the same period. This demonstrates the beneficial effect of the treatment.

6. **Green Beans :** Market-prospecting missions to the Côte d'Ivoire and Gabon showed that the level of green-bean consumption in these countries is low, so no policy of large-scale promotion of Malian green beans there is practicable. It should be noted that the amount imported by each of these two countries is less than a ton of fine and extra-fine beans per fortnight.
7. **Storage trial with 120 tons of potato :** The end-goal of this trial was to improve the timing of the release of potatoes onto the market by the peasant producers of Sikasso. Two storage techniques (traditional and modern) were compared. It can be concluded from the results that the treatment and storage of potatoes in crates brings about a reduction in losses for all varieties tested, with the exception of the variety Lola, where losses were more or less identical for both storage techniques.
8. **Storage of shallots :** For the women's group in the village of Foabougou (in the *Office du Niger* zone), the Center designed and validated plans for the construction of a building to store shallots over a period of 6-7 months, with a capacity of 100 tons. The project envisages the involvement of partner organizations such as the *Office du Niger*, the URDOC and the IER, and above all of the FCRMD (*Fédération des Caisses Mutuelles du Delta*), who are all ready to participate. The CAE also supported the attendance of 35 dried-shallot production groups from Bandiagara at the trade fairs at Mopti and Sikasso to promote their products. An action plan has been drawn up for these groups, covering training, information, and assistance with technology and marketing. This will be implemented in the course of the third year.
9. **Animal Feed :**
  - The feasibility study on a poultry/livestock-feed production plant carried out in the first year was revised and updated by a specialist in the production and marketing of such feeds. The consultant considered the option of installing feed production units at farm level and compared this with different options for permanent capital investment in a commercial production unit.
  - To raise awareness among producers of the need for high-quality and balanced rations, and of the importance of using them as effectively as possible, the CAE initiated a series of training sessions for livestock and poultry farmers and manufacturers at Bamako, Ségou and Sikasso.
  - A three-volume manual (fattening, dairy farming and poultry production) entitled « *Manuel de Bonnes Pratiques pour l'Alimentation du Bétail et de la Volaille* » (Manual of Good Practice in the Feeding of Cattle and Poultry) has been drawn up and will be published shortly.

## SUPPORT TO AGRIBUSINESSES

### 10. **Activities to encourage the dissemination of market and technological information :**

- Strengthening the network of information-providing partners ;
- Disseminating market and technological information.

The CAE today has 98 subscribers to its publications and information services, 53% of whom are agro-entrepreneurs, 42% partners (public services, projects, organizations etc,) and 5% associations of agribusiness professionals. These subscribers regularly receive the Center's publications. In addition to the publications, certain customers benefit from other services, such as *à la carte* information research, the Internet center (Cyberespace) and the documentation center.

11. **Training activities :** The Center has developed 15 management training modules and organized 54 training sessions using them, attended by 742 participants: 238 from the livestock subsector, 205 from the fruit and vegetables and alternative commodities subsector and 276 from the cereals subsector. According to a survey of those attending, 80% were satisfied having taken several modules. The 3 best-appreciated modules were :

- The Business Plan
- Strategic Planning
- Know Your Costs

12. **Business development :** Following the identification of the principal constraints on the development of agribusinesses, the CAE set up an accelerated program to strengthen the agribusiness support network. The goal of the program is to inculcate in agribusinesses the importance of sound management in gaining access to bank credit, and to create lasting relationships between businesses and consultancies. These can help businesses establish the necessary accounting documentation, draw up balance sheets, and to prepare loan applications for banks and other sources of finance.

13. **Access to finance :** Activities here focussed on :

- Ongoing efforts to set up an internal financing program within CAE ;
- the dissemination of information on sources of finance ;
- establishing partnerships with local banks ;
- developing relations of partnership with West African financial institutions and other sources of financial support ;
- the provision of an external financing program through collaboration with USAID in the establishment of a Micro and Small Enterprise Development Program in Mali, Once established, this program has the potential to ensure sustainable access to credit for Small and Medium-sized Enterprises.

14. **Marketing Promotion :** The main activities were :

- participation in the 2nd International Trade Fair for Agriculture and Animal Resources (SARA 99) at Abidjan ;
- participation in the 2nd International Trade Fair for Food Industries and Technologies (SIAGRO) at Dakar ;
- organization of a Sheep Fair at Tabaski : Operation TABASKI.

**15. The creation of a joint food-packaging purchasing unit for micro and small agribusinesses :** A study was carried out to :

- assess agribusinesses' packaging requirements ;
- bring forward proposals for harmonization and improvement of packaging techniques ; and
- analyze the feasibility of a central purchasing unit for packaging.

**16. Support to the Central Veterinary Laboratory** related to :

- strengthening internal capacity so as to produce a Business Plan for the LCV and develop effective management tools in the form of a manual of administrative and accounting practice ;
- improving vaccine distribution channels through support for attendance at West African and domestic trade fairs ;
- analysis of political constraints on the domestic distribution of vaccines ;
- support to the LCV's Toxicology Unit through the implementation of quality assurance for agricultural produce via increasing the technical capabilities of the Toxicology Unit and the development of a joint action plan including the adaptation or construction of premises.

**17. Support to the Institut d'Economie Rurale** related to :

- Joint work with the IER on the development of a cost recovery plan to improve financial management and increase the transparency of the main income generating centers, and above all the setting up of analytical operating accounts so as to improve cost control and increase profitability ;
- The transfer of IER research results onto computer, now begun, which will facilitate the dissemination of results and their exploitation to the advantage of the agricultural sector as a whole.

**18. Establishment of a cross-border livestock market :** The CAE has been involved in preparations for the creation of the cross-border livestock market at Sikasso through its participation in the National Forum on the Sikasso Cross-Border Market in February 2000 and the establishment of a third Regional Office.

**19. Establishment of the *Observatoire de Pratiques Illicites* :** With CONA/CILSS in Mali the CAE has participated in work on the harmonization of agricultural policy, more particularly in the establishment of the *Observatoire de Pratiques Illicites*, which monitors unlawful practice in the regional cross-border cattle trade.

**20. Harmonization of standards and regulations in the UEMOA area :**

Activities related to :

- preparation of a seminar to provide participants with information about the UEMOA. The first document is ready, and preparations are continuing for this event to take place at the same time as the workshop on agribusiness subsectors.
- participation in the UEMOA round table which formulated recommendations for the establishment of a common agricultural policy, in whose development the CAE itself will also be involved ;
- the publication of a special information bulletin on the UEMOA.

**21. Regional consultations on quality assurance :** the CAE took part in a regional seminar on food security in Africa (Dakar, January 2000), where it also sponsored the attendance of certain participants from Mali, produced a statement on behalf of Mali on the problem of quality control, and presented publicity materials for the Toxicology Unit of the LCV.

**22. The Investors' Round Table :** the CAE organized a round table for agribusiness sector investors (Bamako, November 1999), bringing together private economic operators and staff from support services and public bodies, under the patronage of the President of the Mali Chamber of Commerce and Industry.

**23. Study on the revision of legislation concerning the export trade in fruit and vegetables :** this activity mainly related to strengthening the capacities of private sector interest groups and is intended to lead to the production of an orientation document.

**24. Study on the development of an action plan for agribusiness subsector promotion policy :** On behalf of the Ministry of Industry, Trade and Transport, the CAE has begun a vast study preparatory to the development of an action plan for a promotion policy for agribusiness subsectors. Emphasis is placed on the investment opportunities represented by the 22 agricultural products considered.

**25. CAE communications :** the following activities were carried out :

- drafting of a communications strategy document ;
- drafting and dissemination of publicity materials for the Center (prospectus, information folder, posters) ;
- participation in trade fairs (SARA 99 at Abidjan, two local fairs and SIAGRO 2000 at Dakar) ;
- organization of workshops to present the Center's activities ;
- organization of media campaigns in the context of certain activities (launch event for the high-quality rice trial, publicity documentary on mangoes).

**TABLE OVERVIEW OF PERFORMANCE BY INDICATOR**

The following table offers an overview of the Center's results in terms of performance indicators. It should be noted that for certain activities performance has exceeded expectations. In other cases, however, expected results were not achieved, as a result of internal or external constraints. It is also important to remember that the Center has also successfully carried out certain activities not included in the Year 2 Workplan but

which were later realized to be very important for agribusiness subsector development.

#### OVERVIEW OF PERFORMANCE BY INDICATOR

Intermediate Results	Operational Objectives	Baseline Indicator	Year 2 Indicator / Target	Result Achieved	% achieved
Promote new cereal-processing technologies	Improve rice hulling	-	# businesses using technology	4 businesses using new rice-hulling technology	400 %
	Improve quality of maize-processing products	-	# businesses using technology	Tendering in progress for trial of maize degerming at 3 or 4 mills.	Time taken to identify appropriate technology did not allow activity to begin.
	Adoption of new technology for cleaning millet/sorghum	-	# businesses using technology	Not carried out	Activity rescheduled for Year 3
Develop export opportunities for mango	Increase volume of mango exported (sea + air)	37 tons	105 tons	280 tons by sea 42 tons by air	307 %
	Feasibility study conducted on semi-industrial mango-drying unit	-	Study carried out.	Pre-feasibility study carried out	Feasibility study will begin 9 November 00
Develop export opportunities for green beans	Investigate markets in Gabon and RCI	-	Market test in RCI and Gabon	Test carried out	100 %
Develop export opportunities for alternative commodities	Promote export of other fruits	-	Market testing of 2 products	Shallot from ON and Bandiagara selected	Storage and drying technologies identified



<b>Intermediate Results</b>	<b>Operational Objectives</b>	<b>Baseline Indicator</b>	<b>Year 2 Indicator/ Target</b>	<b>Result achieved</b>	<b>% achieved</b>
Improve availability of balanced rations of livestock and poultry feed	Set up livestock and poultry feed mill	-	Livestock and poultry feed mill operational	Feasibility study updated on smaller scale	Identification of promoter in progress
Improve animal feeding techniques	Train farmers and raise their awareness of improved animal feeding techniques	-	% of farmers able to formulate a balanced ration	More or less 50% of farmers trained	50%
Improve availability of commercial and technological information	Improve availability of information from CAE	-	60% of customers having taken concrete action on basis of information received through CAE	75 % of customers receiving information, but few have taken commercial action on this basis.	Very few customers make use of commercial information provided, as a result of upstream constraints (finance etc.). Technology information appreciated by customers, who cannot purchase for lack of funds
	Improve availability of information from Mali	-			
	Improve availability of information from Africa	-			
	Improve availability of information from rest of the world	-			
Improve the management capacities of entrepreneurs and associations	Train entrepreneurs in business management	14	60 % of participants applying their new knowledge	More than 60 % of entrepreneurs trained applying new techniques	More than 100 %
	Train associations and groups	1			

<b>Intermediate Results</b>	<b>Operational Objectives</b>	<b>Baseline Indicator</b>	<b>Year 2 Indicator/ Target</b>	<b>Result achieved</b>	<b>% achieved</b>
Improve quality control	Train businesses in HACCP method	-	% of businesses applying HACCP method	Training for 29 businesses in progress	Two first training sessions carried out
Develop businesses and facilitate their access to finance	Increase capacities of agro-entrepreneurs	-	10 businesses having developed a business plan and submitted it to banks	15 businesses have developed a business plan and submitted it to banks	150 %
	Improve agro-entrepreneurs access to finance	-	4 businesses having acceded to other sources of finance thanks to CAE	Two businesses working with APDF to increase plant size; four SSE funding applications completed ; proposal for CAE finance program made to SEG	More than 100 %

<b>Intermediate Results</b>	<b>Operational Objectives</b>	<b>Baseline Indicator</b>	<b>Year 2 Indicator/ Target</b>	<b>Result achieved</b>	<b>% achieved</b>
Improve sustainability of IER and LCV	Draw up cost recovery action plan for IER	-	# of businesses using information or services from IER	10 processing plants	Analyses carried out by LTA/IER for these plants, for use at SARA
	Reorganize distribution channels for LCV vaccines	-	Vaccine sales volumes	Workshop held on new scheme for vaccine distribution,	Activity on course. Recent meeting for all actors.
Develop sub-regional trade	Inform and train businesses re. UEMOA legislation	-	# of businesses with West African contacts thanks to CAE information or activity	10 businesses	CAE services most used by livestock traders
	Convergence of agribusiness policy (CILSS)	-	Establishment of monitoring unit for unlawful cross-border practices.	Preparatory study in progress	50%

<b>Intermediate Results</b>	<b>Operational Objectives</b>	<b>Baseline Indicator</b>	<b>Year Indicator/ Target</b> <sup>2</sup>	<b>Result achieved</b>	<b>% achieved</b>
Improve political and economic environment of agribusiness sector	Identify institutional, political and regulatory constraints	-	2 constraints identified	3	150%
	Increase private sector participation in dialogue	-	% businesses taking decisions following CAE forums	50% of Malian agribusinesses in formal sector	More than 100%

**Source : CAE**

## SECTION I

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### Introduction

This document presents a review of activities carried out by the Centre Agro Entreprise (CAE) from October 1999 to September 2000. The results achieved by the Center in terms of improvement in the processing and marketing of agribusiness products represent the intermediate results of the SEG program (see Figure 1 in Annex 1).

Table 1 shows the contractual results expected over the five years of the Center's life, and indicates the expected results for :

- commercial development ;
- information ; and
- policy.

For this second year of operations, the CAE team drew up an annual Workplan in which it set twenty-three objectives for the period October 1999 - September 2000.

These activities related on the one hand to improving the processing and/or marketing of agricultural products, and on the other to cross-cutting activities intended to support the subsector development activities, such as :

- training courses to improve businesses' capacities ;
- support for access to finance ;
- provision of information ; and
- analysis of sector-related policy.

This Year 2 Workplan was submitted to USAID for approval, and also to other partners (beneficiaries of the Center's support, public services, other support organizations) in the course of a day-long discussion meeting.

The present document reports on the execution of the work plan and is structured as follows:

- The first chapter deals with the execution of commodity subsector development activities ;
- the second and third chapters cover cross-cutting activities (in support of subsector development) and activities to improve the agribusiness environment respectively ;
- the fourth chapter deals with CAE expenditure ;
- and the last chapter discusses the monitoring and evaluation of activities.

**Table I – 1 : CAE contractual results**

CR 1 :	Improved domestic market information on cereals, livestock, and alternate commodities available on a real time basis.
CR 2 :	Improved West African and other international market and technology information available on a periodic basis to Malian agribusiness operators.
CR 3 :	New product opportunities in primary and processed commodities test-marketed by Malian agribusiness operators with domestic, West African and international trading partners.
CR 4 :	Increased awareness and use of competitive production and processing opportunities and technologies by Malian agribusiness operators.
CR 5 :	Increased capacity of Malian agribusiness operators to develop bankable (feasible) business plans and manage successful businesses.
CR 6 :	Agribusiness operators' access to and use of equity and working capital from Malian and other financial institutions increased.
CR 7 :	IER providing services to agribusiness in the production and processing of cereals, livestock and alternative commodities.
CR 8 :	Central Veterinary Laboratory (CVL) operating on a sustainable basis to provide improved services to agribusiness , including private veterinary pharmacies.
CR 9 :	Role of commercial private sector in implementation of agricultural development policy (crops and livestock), clarified, discussed, and disseminate, including its role in supplying essential inputs.
CR 10 :	Support the harmonization of product quality regulations and standards within West Africa and with other trading partners.
CR 11 :	CAE intermediate results, indicators and targets validated, maintained, and reported on in close collaboration with USAID SEG, USAID Results Center, and other CAE and mission partners.

**Source : CAE**

## SECTION II

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### COMMODITY SUBSECTOR DEVELOPMENT ACTIVITIES

Adopting the commodity subsector approach as the strategy for intervention, objectives were defined for the following products :

- Cereals : rice, maize and millet/sorghum.
- Fruit and vegetables and alternative commodities subsector : mango, green bean, potato and other vegetables.
- Livestock : cattle and poultry feed and the livestock market.

#### 2.1 – Cereals subsector :

The objectives for the cereals subsector related to :

- the promotion of new processing technologies for rice, maize and millet/sorghum ;
- the promotion of coarse cereals in the sub-region.

**Table II – 1 : Performance indicators for the promotion of new processing technologies**

Intermediate Results	Operational Objectives	Baseline Indicator	Year 2 Indicator/ Target	Result achieved	% achievement
Promote new cereal processing technologies	Improve rice hulling	-	# businesses using the technology	4 businesses using new rice-hulling technology	400 %
	Improve quality of maize-processing products	-	# businesses using the technology	Tendering in progress for trial maize degerming at 3 or 4 mills.	Time taken to identify appropriate technology did not allow activity to begin.
	Adoption of new technology for cleaning millet/sorghum	-	# businesses using the technology	Not carried out	0 %

**Source** : CAE

### 2.1.1 – Rice-milling trial in the *Office du Niger* zone

#### ***Context, objectives and justification***

Several analyses of the rice subsector have emphasized the need to remove constraints related to product quality. A very strong correlation exists between the technical standard of processing and the quality of such products as rice. Improvement of processing technologies and better training and better information are all capable of increasing the value added to Malian rice.

On the basis of the constraints identified in the course of the various diagnostic exercises in the rice-producing areas of Mali, the CAE carried out a rice-quality improvement trial in the *Office du Niger* zone. The general objective of the trial was to improve the processing itinerary in the Ségou region, and also to improve rice-processors' access to better market prices for their production by improving their understanding of price and quality as they affect the marketing of rice.

#### ***Implementation***

##### **Zones and sectors concerned**

Four sites equipped with rice-hulling and grading equipment were established in the *Office du Niger* zone. The installation of these processing stations at village level was intended to increase the value added to rice through improvement in quality, in response to the market demand for top-quality rice and as a growth strategy.

The consultancy appointed by the CAE to see to the implementation (Groupement Nyeta Conseil / Afrique Verte) supervised the following operations :

- The installation in the *Office du Niger* zones of Niono and N'Débougou of rice-processing workshops equipped with compact rice-hullers and graders (see photographic illustrations in Annex 4) ;
- The training of machine operators in proper rice processing, as well as consultancy support in : the use of improved rice-processing techniques and an understanding of the quality problems connected to the purchasing of paddy (raw material) ; better presentation of products (labeled 25 and 50 kg sacks) ; the classification of rice into different qualities, in terms of the requirements of different market segments ; the marketing of the finished product ; and the promotion of quality.

##### **Organization of activities**

The consultancy developed selection criteria for site managers on the basis of their local experience and their ability to innovate to improve the quality of rice for the market.

The problem of quality is reflected in the criteria which the consultancy applied to the 160 tons of paddy to be purchased by the CAE for the purpose of this trial. The following table recapitulates the principal characteristics of paddy and their impact on the quality of the milled rice :

**Table II – 2 : Principal quality criteria for rice paddy**

Quality criteria for paddy	Impact on the quality of finished rice
Varietal purity	Loss of value if grains are of different sizes.
Cleanness	Depending on the nature of the impurities, there can be increased wear on certain parts of the processing equipment (from stones or metal), or lowered yields, or characteristic darkening (from dirt or dust). Although a certain tolerance is allowed, the ideal is 0 %.
Colour	Certain discolorations, the result of mould or disease, can persist after milling. The rice obtained is then less attractive.



Water content	Excessively high or low moisture content may lead to a higher rate of broken grains in the processed rice. The generally accepted optimum level is 14 %.
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**Source** : CAE

Dealing with the problem of purchasing raw materials on site necessarily requires a good understanding of rice paddy characteristics and the application of criteria and purchasing standards in commercial transactions in paddy. In this respect, the efforts of the consultancy were focussed on raising operators' awareness of these issues during the buying of the paddy for the purposes of the trial. It is clear that this kind of effort can bring about more lasting and palpable results and deserves to be continued.

### ***Resources mobilized***

Resources were mobilized through two sub-contracts : with the Nyeta Conseil / Afrique Verte consortium for the execution of the program, and with the *Agence Nationale de Communications* (ANC) for the development and distribution of publicity material.

The consortium provided the following staff for the implementation and monitoring of the trial :

- One program coordinator based at Niono ;
- One technologist responsible for the training of machine operators ;
- Four monitoring staff who collected technical data on the performance and yield of the hullers and graders ;
- One coordinator of the marketing sub-program who was responsible for the distribution of rice to traders and for the monitoring of sales.

The *Agence Nationale de Communications* (ANC) was responsible for the communications segment of the trial which consisted of :

- the organization of a launch for the trial, which took place at Niono on 29th June;
- the design and placing of advertising in national press, radio and TV ;
- the organization of a debriefing workshop to communicate the results of the trial to participants.

### ***Results achieved***

The trial essentially concerned the following aspects of white rice production :

- the processing itinerary (in two stages: hulling and polishing and introduction of grading) ;
- packing and presentation in marked sacks (50/25 kg) graded Whole or Broken ;
- Raising the artisanal sector's awareness of the quality to be achieved through good practice in the use of technology.

As regards technological aspects, the training of site technicians in good production practices for the processing of rice was successfully achieved. An operator's manual entitled «*Guide du Conducteur*» was drawn up by the consultancy. For the whole duration of the trial, the collection, management and analysis of data on factors of production were regularly monitored. The work methodology proposed by the consultancy took account of the characteristic features of small-scale processing.

In the course of the trial, essential production data were collected on the operation of the compact rice-hullers (Models SB10 and SB 05 of Chinese manufacture), and also on the grader locally manufactured in Niono by CAFON. This allowed a better identification of the appropriate technical characteristics as regards :

- paddy quality ;
- the SB huller as compared with the Engelberg huller ;
- the CAFON grader, to separate whole from broken rice, which allows one to obtain a more uniform finished product of higher quality in terms of visual presentation.

What was important in the determination of these characteristics was the possibility of providing suggestions to future promoters who might be investigating combinations of equipment at the least cost in terms of purchase and maintenance so as to be able to produce better quality rice at village level.

In this respect, on-the-job training provided by the Technologist/Engineer taught managers how to keep records such as an equipment log, materials account, analysis of production costs. Practice showed them the relevance of good sourcing of paddy for machine processing and how best to hull and polish the rice.

The local grading of rice gave a product that was free of impurities and which could be classified into four qualities of finished product that would better meet the varying requirements of different segments of the urban market, e.g. preferred grain size, uniformity of quality, etc. The processing sites offered :

- A product termed E1 : a whole (*Entier*) long-grain white rice, representing 40% of the total quantity ;
- A product termed E2 : a rice containing broken grains (between 90% and less than 50%) representing 15% of the total ;
- A product termed BM : 100% white rice with 50% medium broken grains (*Brisures Moyennes*) representing 40% of the total ;
- and a product termed BF : 100% white rice, small and fine broken grains (*Brisures Fines*), representing 5%.

These results were obtained through better hulling and polishing, and above all by grading at the site of production, thus avoiding the re-grading costs of the rice-traders to the benefit of the producers.

The results from the milling of 160 tons of paddy (Gambiaca and BG varieties) at the four sites are :

- Yield of rice from processing of paddy: 66.6% (106 tons of white rice) ;
- 40% whole white long-grain rice (1st quality) ;
- 15% large broken grains (2nd quality) ;
- 45% smaller broken grains (medium, small and fine).

**N.B.** : The proportion of whole grain was less than the 60% expected since the moisture content of the paddy was below 10% owing to the initial storage conditions.

Although the CAE has not yet received final reports from partners, preliminary results show that :

- the rice produced at the four sites was of exceptional quality, rivaling the best imported rice ;
- the trial confirmed the existence of a substantial domestic demand for top-quality rice. This demand is principally for the Gambiaca variety, 74.5 tons of which were sold very quickly after being placed on the market.

### ***Conclusions***

At this stage of the trial it is clear that the following aspects of raw-materials purchasing are critical and will determine the operator's control over the quality of rice to be put on the market: verification of paddy quality on purchase, transport, storage and finance.

Market demand alone will not bring about the changes needed in product processing. Resources must be dedicated to convincing processors to change their methods and to buy paddy on the basis of intrinsic quality and price. Furthermore, support organizations must do more basic work on quality control upstream (from the harvest to the sale of the paddy by the grower), which currently receives little attention from rural extension agents. Efforts from such organisations can complement the various pressures and demands exerted by distributors and the purchasing power of the final consumer to raise standards in the industry. This can best be done by a limited number of processors who specialize in the production of high-quality rice. This is the goal of future collaboration between the CAE and the *Office du Niger*, to support private promoters committed to high-quality rice in the ON zone. Together we can invest in awareness-raising and market promotion.

Such changes require good market information which must focus on :

*1. The analysis of market segments for high-quality rice :*

- close contact between processors and consumers and traders concerned with quality ;
- market share of high-quality rice ;
- a quality premium ;
- better prices for quality rice.

*2. Promotion strategies :*

- Media campaign on quality (raising awareness through broadcasting of TV and radio spots) ;
- Reporting on the subsector and its potential.

*3. Ways of promoting investment in the post-harvest segment :*

- Diffusion of information on the segmentation of the market and on the quality standards desired ;
- Identification and targeting of the different market segments for high-quality rice ;
- Discussion with the principal actors to promote quality ;
- The dissemination of technological information ;
- Investment opportunities in the high-quality rice segment and assessment of potential profitability.

### **2.1.2 - Maize-degerming trial**

Despite the existence of a flour-milling network in the CMDT zone, with eight artisanal units each with a production capacity of 250 tons p.a., a tiny percentage (less than 1%) of maize production is processed at the existing small-scale units. With low productivity and artisanal methods, quality is below market requirements.

Despite market demand for wider processing of maize to an acceptable standard the great majority of current maize production is marketed raw (sold in the grain), or processed at home for household consumption.

Processed products (semolina or broken grains) sell well enough, except for flour (25% of processed product) – and this because of its current characteristics.

To improve shelf life and product quality the maize needs degerming which involves further investments in equipment and training. In order to determine the technical, organisational and commercial constraints to such a development, CAE plans to carry out a test of new degerming equipment, using the following working hypotheses to design its test :

- confirm potential market outlets for flour ;
- investigate degerming technology suitable for the scale of production at these mills.

Regarding the technology, CAE plans to use the degermer developed by the LTA/IER. Construction of an improved model is in hand, and the LTA has been chosen to monitor the introduction of the process in two of the mills for trial purposes. The product thus obtained will be test-marketed, and a detailed analysis of the real market outlets for flour developed.

Delays associated with the selection of technology have meant that the trial could not proceed this year, and it is planned to carry it out at the beginning of Year 3.

The stages already concluded are as follows :

- terms of reference are ready to test the efficiency of the prototype degermer designed by the LTA, and to carry out market research on degermed maize flour.
- An invitation to tender has been issued and technical and financial proposals received and analyzed. Official notification of the tender accepted will be sent at the beginning of October.

- Two degermers based on the LTA prototype have been ordered and the locations for their installations determined, at Karangana and Nampossela in the Cercle of Koutiala.

### 2.1.3 – Awareness-raising campaign on the cleaning of millet/sorghum

The approach envisaged when the Workplan was drawn up was to conduct an awareness-raising campaign on the cleaning of cereals (substantial reduction in the proportion of impurities). The demands of the regular monitoring of the improved rice quality trial meant that this activity has been postponed until Year 3.

## 2.2 – Fruit and vegetables subsector :

The objectives laid down for the development of the fruits and vegetables and alternative commodities subsector were :

- To develop export opportunities for Malian mangoes ;
- To develop export opportunities for Malian green beans ;
- To promote the processing, conservation and sale of alternative commodities.

### 2.2.1 – Development of export opportunities for mango

**Table II – 3 : Performance indicators for the development of export opportunities for mango**

Intermediate Results	Operational Objectives	Baseline Indicator	Year 2 Indicator/ Target	Result achieved	% achieved
Develop export opportunities for mango	Increase volume of mango exported (sea + air)	37 tons	105 tons	280 tons by sea 42 tons by air	307 %
	Feasibility study conducted on semi-industrial mango-drying unit	-	Study carried out	Pre-feasibility study carried out	Feasibility study will begin 9 November 00

**Source :** CAE

### Context, objectives and justification

Despite the constraints in terms of capacity and cost, air transport remains the favored option for the supply of mangoes of good quality to the European markets. The vast majority of mangoes exported pass through Rungis market in Paris. The surplus of African mangoes on this market between March and May each year does not encourage the higher prices that would justify the high transport costs.

One strategy to make the export of mangoes by air more profitable would be to diversify outlets. It was with the investigation of new markets in view that the Center visited English importers in February to promote mangoes from Mali. A promotional documentary on video was produced to demonstrate Mali's potential as a source of quality mangoes.

The mission allowed the Center to identify three British importers interested in importing Malian mangoes.

### Implementation

Following the identification of the UK importers interested in air-freighted mangoes from Mali, the CAE formed a pool of four exporters at Bamako - Flex Mali, Fruitex, Deguessi Vert and Mali Primeurs – to meet the demands of the English market. The exporters were selected on the basis of :

- their experience ;
- their capacity to maintain a regular supply of quality mangoes ; and
- their desire to diversify their outlets.

During the 2000 export campaign the Center acted as an intermediary and facilitator between the exporters and the three British importers. Specifically, the CAE :

- ensured that terms of carriage were agreed that allowed the products to be dispatched without payment in advance ;
- communicated to the exporters the orders of their British partners ;
- informed the importers of the arrival dates of the shipments ;
- analyzed and passed on the sales accounts and ensured the transfer of payments to the exporters.

In addition, so as to support these exports, the CAE provided the exporters with suitable packaging for the British market. This involved the purchase by CAE of 20,000 cardboard boxes from SOMEPAAC at Bamako and 35,000 from La Rochette at Dakar. This purchase came just in time to avoid a halt in exports mid-campaign due to the lack of boxes.

Exporters were able to draw on this stock of boxes, paying 50% of the price on collection and the remaining 50% within 5 weeks of the mangoes being exported. To date some 14,000 of the SOMEPAAC boxes have been used, and the remainder will be used in the next campaign.

### ***Zones and sectors concerned***

The mangoes exported in the context of this diversification project came mainly from the Bamako Region and the Cercle of Bougouni.

The sectors concerned were mango producers, purchasing agents, packing-station staff and exporters.

### ***Resources mobilized***

Resources mobilized consisted essentially of CAE the technical staff who ensured the proper conduct of the operation.

### ***Results achieved***

The pool was able to export by air some 42 tons of mangoes to this new market to the satisfaction of its British clients (Unique Fresh Produce, Paul's Fruit and Veg. and Redbridge).

In addition to the tonnage actually exported, Mali has also established itself in the British market. Indeed, the introduction of Malian mangoes has generated a great deal of interest on the part of English importers. This interest was reinforced by the Center's organizing in September/October a marketing tour for the exporters of the Bamako pool, which took in the UK, Holland, Germany and France.

### ***Conclusions***

The development of exports to the British market opens favorable prospects for the future. Although the majority of British importers are more interested in mangoes by sea, opportunities exist to significantly increase air shipments to this new market. These opportunities will be exploited in the course of the coming campaign.

#### ***2.2.1.2 – Feasibility study on the drying of mangoes***

The execution of a feasibility study for a mango-drying facility was the logical consequence of the study carried out in the first quarter of Year 2 of the project. In fact, this opportunity study (of production and market demand) carried out by CIRAD allowed the CAE to focus its efforts on drying as opposed to other forms of processing. The team to carry out this feasibility study, that is to say a financial

analyst and an expert on the drying of food products, has already been identified. The study is planned to take place in November 2000.

### ***2.2.1.3 – Pilot project on the export of mangoes by sea from Sikasso***

#### ***Context, objectives and justification***

For more than 5 years mango exports from Mali have fluctuated around the 1000 ton mark, two thirds going by air. Given European demand, this level of exports is very low compared to a production potential of 100,000 tons.

Optimal exploitation of this substantial potential will be possible only if Mali develops the sea-freighted subsector, as this is the only possibility of making Malian mangoes more competitive on the European market.

The development of the sea-freighted mango sector will require a major involvement on the part of institutional investors, for the requirements in terms of operating capital considerably outstrip the financial capacity of the vast majority of private investors.

This critically necessary involvement will be forthcoming only if the banks understand in detail the daily logistical operations involved in an export campaign, so as to be able to make an informed judgment on the risks and opportunities involved in this significant sector of the local economy. Local banking institutions are ill-informed about the mango export trade, and this situation is a major obstacle to the funding of projects for the export of mangoes by sea.

In Mali there is only one modern mango pack-house with an efficient packing line and cold-rooms capable of sustaining export by sea. This facility, which belonged until recently to the *Société Agrumes et Oléagineux du Mali* (A.O.M.), is situated at Sikasso and operated for three years until June 2000. The pack-house has dispatched mangoes of quality, appreciated by European importers, but quantities exported have been relatively low (some 450 tons in 1999), as a result of the lack of operating capital for packing operations and the purchase of raw materials.

To deal with this lack of operating capital, and at the request of four exporters at Sikasso, organized as a pool, the CAE is undertaking a pilot project on the export of mangoes by sea. While the various members of the pool already had a clientele of European importers and substantial experience of packing mangoes for export by sea, they lacked financial support and commercial assistance in the identification of English importers.

In this pilot project the objective of the CAE was to assemble a comprehensive dossier on the technical, financial and management aspects of mango export and to make this available to actors in the subsector and also to financial institutions, so as to demonstrate the potential profitability of the export of mangoes by sea and to generate investor interest in the subsector.

This dossier covered :

- the diversification of market outlets for Malian mangoes ;

- a strategy for increasing the productivity and yields of participating operators ;
- recommendations for better co-ordination between the elements in the production/packing/marketing chain ;
- a demonstration of more advanced techniques for planning and coordinating the work of a campaign ;
- the drawing up of a dossier to promote the mango sector to potential financial partners.

### ***Implementation***

In their original request for assistance, submitted in January 2000, the pool suggested that the funds should be managed by a third party who would be responsible for receiving and disbursing the funds made available to the pool by CAE. This led to the signature of a contract between the Center and Crédit Initiative S.A.<sup>1</sup> for the management of the funds allocated to the mango pilot project.

In addition, an agreement was signed with the pool which described the roles and responsibilities of the two signatories. The responsibilities of the CAE were :

- the provision of operating capital ;
- the provision of technical/commercial assistance in the identification of importers in European markets (and in Britain in particular).

Those of the pool were :

- to use these funds for clearly specified purposes, laid down in the project program ;
- to establish a system whereby funds from the sale of mangoes would be paid directly into an account managed by Crédit Initiative S.A.;
- to respect the conditions of disbursement laid down by the CAE and the managers of the fund ;
- to provide CAE with weekly reports on the conduct of the campaign and to give it access to the documents necessary to monitor disbursements.

In the eighth week of operation, the pool became self-sufficient in operating capital, using its receipts from the sale of mangoes.

The program for the execution of the project, as proposed by the members of the pool and adopted by the Center, covered the export of 1,222 tons of mangoes between March and June. It was drawn up on the basis of the practical weekly capacity of the AOM packing station at Sikasso and of the limitations related to the level of operating capital available. The Center recognized that the program was highly optimistic, but, given that the principal objective of the trial was to draw up a comprehensive dossier on the export of mangoes by sea, the execution of the program in its entirety was a matter of secondary importance.

### ***Zones and sectors concerned***

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<sup>1</sup> Created in 1995 and supported by the European Development Fund (EFD), Crédit Initiative S.A. is a financial institution with 7 branches located in the different regions, with the exception of Koulikoro and Kidal.

The zones involved in the trial covered the main mango-production areas in the south of the country, that is to say, Bougouni, Yanfolila and Sikasso.

The participants directly affected by the trial were :

- the mango producers of the zones mentioned above, who sold their harvest at a good price, considering the market ;
- the *Association des pisteurs de Sikasso*, who bought the raw materials ;
- some fifty temporary staff employed by the packing station and the four exporters directly concerned.

### ***Resources mobilized***

The Center mobilized substantial resources to carry out the pilot project, Crédit Initiative S.A., managed the receipts and disbursements for the pool under a sub-contract with the Center. An agronomist from CIRAD, an expert in the production and packing of mangoes, carried out two short-term missions at the Sikasso pack-house to provide direct technical assistance to the staff. Several members of CAE staff carried out supervisory missions, and acted as liaison between exporters and importers. The day to day progress of the project was monitored at CAE headquarters in Bamako.

### ***Results achieved***

The table below gives the results from the test.

**Table II - 4 : Volume exported (kilos)**

Dates	Va riety	Quantity produced	Quantity exported	Damage notified
6/4-15/4	Amélie	38,830	24,533	0
16/4-25/4	Amélie	37,403	51,700	7,384
26/4-5/5	Am / Kent	52,386	2,554	0
6/5-15/5	Kent	49,674	54,330	0
16/5-25/5	Kent /Keitt	20,855	36,556	10,748
26/5-4/6	Kent /Keitt	37,871	36,556	2,877
5/6-14/6	Kent /Keitt	9,572	10,853	2,112
15/6-24/6	Kent /Keitt	0	0	0
<b>TOTAL</b>		<b>246,591</b>	<b>217,082</b>	<b>23,121</b>

**N.B.** : Quantities given in tons

Quantities achieved fell short of what had originally been programmed mainly because of the unavailability at the right time of the operating capital to finance the second half of the campaign.

Nonetheless, through its daily involvement in the management of the campaign, Crédit Initiative was able to gain a detailed understanding of the export trade, and is now already interested in identifying opportunities for future investment.

Thanks to the pilot project, the Bank of Africa has shown growing interest in this subsector, and hopes that the Center will be involved in establishing the packing station on a sound financial footing.

It is at present too soon to offer a financial analysis of the operation, as there is income still to be received and pool invoices remain to be settled.



One can nonetheless already make certain observations. Costs of production and the running costs of the station were underestimated, in particular as regards the cost of the raw materials, as the purchase price of mangoes at the station rose to 150 FCFA per kilo in April rather than in May as had been expected.

## **Conclusions**

The execution of the project enabled the CAE to draw important lessons as regards the operational aspects of a mango-export campaign, summarized in the following points :

- The work on a program for export by sea needs to begin at the end of the previous campaign, and the whole of the operating capital required should be available well before the opening of the campaign ;
- Organizational questions need to be resolved in time to allow efforts to focus on the internal organization of production, in particular the sources and conditions of purchase of mangoes and the recruitment of temporary staff ;
- The recycling of funds through advances on payment or receipts from importers is not a sufficiently reliable mechanism on which to base a financial plan. Bank finance throughout the season is essential.

Despite the difficulties encountered with the pool, the principal objective was achieved and the CAE will make the results available to actors in the subsector in the course of the next quarter.

### **2.2.2 - Anti-fruit-fly Campaign**

#### **Context, objectives and justification**

Mango export is an activity that creates considerable added value, whose benefits are felt by the several different types of actor in the subsector : producers, purchasing agents, packing-station staff and exporters. Fruit-fly attack is a definite problem for this very promising sector, as it reduces by 50% the quantity of mangoes available for export; and when infected mangoes are exported this leads to the destruction of the whole consignment and damage to Mali's reputation as a reliable source of supply.

The development of this subsector therefore necessarily requires the establishment of a system for monitoring and countering fruit-fly attack in order to guarantee a product of irreproachable quality for very promising foreign markets.

In response to this situation, the CAE has undertaken to support the development, and then the dissemination of an integrated approach to the prevention of fruit-fly attack. M. Jean François Vayssières, an entomologist from the CIRAD, has been commissioned to carry out the three following tasks :

- to make an inventory of the species of flies in the zones of Bamako, Bougouni and Sikasso;
- to determine the effect of the flies on mango plantations in the three zones ;
- to suggest treatment protocols for dissemination.

#### **Implementation**

The entomologist arrived in Mali in the first week of April. Having established a laboratory at the CAE branch premises at Sikasso, he identified three orchards in the neighborhoods of Sikasso, Bougouni and Bamako which would serve as sites for his experiments. He then drew up an inventory of the flies present at these orchards.

Having identified the species of fly, the expert then set up a system of traps in order to monitor fly populations at the various sites. This monitoring program, begun in May continued until October 2000.

Trials to determine the efficacy of different techniques for the prevention of fruit-fly attack were begun at the three sites in June, and will continue until September 2000.

#### **Zones and sectors concerned**

The zones concerned by this activity are Sikasso, Bougouni and Bamako, and the sector is essentially that of the investigation and dissemination of good practice in production and post-harvest operations.

#### **Resources mobilized**

In the execution of these various tasks the consultant from CIRAD was assisted by an engineer from the *Institut d'Economie Rurale* (IER), so as to ensure sustainability, and by a local consultant, an expert on mangoes, for monitoring the orchards in the District of Bamako.

### ***Results achieved***

The preliminary results have led to the identification of four species of fruit fly present in the orchards, these being *Ceratitis cosyra*, *Ceratitis quinaria*, *Ceratitis silvestrii* and *Ceratitis rosa*, with *Ceratitis cosyra* clearly predominant in the three zones investigated : Bamako, Sikasso and Bougouni.

Estimates of the rate of damage to mangoes of the Kent and Keitt varieties range between 30 and 48% for non-treated orchards at Madina in the Region of Bougouni. Estimates of the rate of damage at the same site, with spot treatment, ranged from 9% and 28% during the same period. This demonstrates the positive effect of the treatment, but a financial analysis remains to be done to show the profitability of carrying it out.

### ***Conclusions***

It is premature to draw conclusions, as the definitive results of the investigations are not yet available.

Nonetheless, one may note the enthusiasm with which this activity was welcomed by the mango producers and by the *Institut d'Economie Rurale*. The work already carried out represents a useful platform for the extension of activities to prevent fruit-fly damage in the coming years.

### 2.2.3 – The development of export opportunities for green beans

**Table II – 5 : Performance indicators for the development of sales opportunities for green beans**

<b>Intermediate Results</b>	<b>Operational Objectives</b>	<b>Baseline Indicator</b>	<b>Year 2 Indicator/ Target</b>	<b>Result achieved</b>	<b>% achieved</b>
Develop export opportunities for green beans	Investigate markets in Gabon and RCI	-	Market test in RCI and Gabon	Test carried out	100 %
Develop export opportunities for alternative commodities	Promote export of other fruits	-	Market testing of 2 products	Shallot from ON and Bandiagara selected	Storage and drying technologies identified

**Source :** CAE

#### ***Context, objectives and justification***

Given the high concentrations of expatriates living there, certain countries in the sub-region, Gabon and Côte d'Ivoire particularly, have often been suggested as potential outlets for Malian green beans. To examine the feasibility of exporting this high value-added product to these destinations, the CAE organized a study tour of these markets in January 2000.

#### ***Results achieved***

The missions to Gabon and the Côte d'Ivoire led on the one hand to an understanding of these markets, and on the other to the identification of potential partners. The most important observation as regards the two markets is their low level of green-bean consumption. The small size of these markets means that no large-scale promotion of green beans is practicable in these countries. It should be noted that the quantity imported by each country is less than a ton of extra-fine and fine haricot beans per fortnight.

In addition, given the interest expressed in such a project by exporters in 1989-90, it was envisaged that the CAE would collaborate with exporters to establish a system for the quality-certification of the green beans on their arrival at Rungis market in France. Production difficulties and the very mediocre prices obtained for Malian green beans in 1999-2000 have meant that exporters were reluctant to increase their costs by setting this up.

#### ***Conclusions***

Given the low demand in the two countries, and the fact that this demand is already being met by other West African countries which enjoy a comparative advantage in terms of transport costs, the Center does not envisage promoting the development of sub-regional trade in green beans.

## ***Promoting the processing, storage and sale of alternative commodities***

### **2.2.4 – Potato storage trial at Sikasso**

#### ***Context, objectives and justification***

Despite its significant potential, the potato subsector faces several constraints that hamper its development. Among these are the problems with post-harvest techniques, including storage, and the absence of finance and organization for marketing.

Given this, the CAE has initiated a program to improve potato storage and post-harvest techniques. The objective of this trial was to :

- determine the efficacy of storage in crates ;
- identify ways and means to organize marketing better and to rationalize purchasing of inputs through greater involvement of the *Association des Producteurs de Pomme de Terre de Sikasso*.

#### ***Implementation***

This trial was carried out in collaboration with the NGO AMATEVI, which supports the *Association des Producteurs de Pomme de Terre de Sikasso*, the beneficiaries of the trial. It should be noted that SOC International, a partner of AMATEVI's, was also involved in the execution of the trial. This intervention concerned two areas :

- assistance in the acquisition of two motorcycles for the AMATEVI technicians ;
- the purchase of fungicide and anti-sprouting agents for the treatment of the stock stored in the crates.

Initially the test was intended to involve 150 volunteer growers from several different villages who had already taken out a loan with the decentralized Kafo Jiginew credit bank. The increase of the storage capacity of the crate from 15kg to 25 kg and the great enthusiasm aroused in the potato-growing villages led AMATEVI to increase the number of beneficiaries from 150 to 262, the number of villages covered increasing from 12 to 28.

The principal activities programmed as part of the trial were :

- the selection of volunteer growers to participate in the trial ;
- the training of the volunteers in the fields of production, harvest, handling and transport ;
- the distribution of the storage crates to the volunteers selected ;
- the establishment of two stocks of potatoes by each volunteer: the one treated and stored in crates, the other untreated and stored in bulk (control) ;
- the selection of tubers for the two stocks (improved and traditional) ;
- quality control of the crates during storage ;
- quantitative monitoring of losses incurred in each stock..

The selection criteria for participating potato growers were :

- interest in better storage ;
- active membership of the Kafo Jiginew credit club ;
- ownership of a stock of a variety that lends itself to storage, such as Claustar ;
- access to a storage area (storehouse).

The training of the volunteer growers covered :

- the choice of variety for storage ;
- the choice of land suitable for the production of good potatoes ;
- information on the right dosage of fertilizer and the period for its application ;
- advice on irrigation timetables and the formation of an adequate ridge ;
- the significance of the haulm and of proper tuberization ;
- advice on the damage that could be caused in the handling and transportation of the product ;
- the best method for sorting, with warning of the risk incurred in the case of sorting errors.

### ***Resources mobilized***

The staff engaged by AMATEVI to carry out the trial consisted of a Technical Coordinator supported by four monitoring staff. As well as monitoring the growers involved in the project, the NGO also saw to the storage of the crates not yet distributed, which made for convenient access to the crates for the purposes of the trial and also to the development of strategies for the preservation of the crates between campaigns.

### ***Conduct of operations***

The beneficiaries of the trial were made responsible for the transport of the wooden crates from the carpenter's workshop where they were manufactured to their own storage sheds. This commitment demonstrated producers' interest in the trial. By the end of April, 1184 cases had been picked up by the producers. Quality control during the manufacture of the crates was the responsibility of AMATEVI. This involved regular checks on the crates' conformity to the specifications agreed with the manufacturer.

The principle of the trial was the observation of two methods for the storage of potatoes as applied by the volunteers :

- A first batch packed in 25kg crates after treatment with a fungicide and an anti-sprouting agent (see photographic illustrations in Annex 3) ;
- a second batch, untreated and stored directly on the ground in accordance with traditional storage methods.

After treating one batch for demonstration purposes the monitoring staff supervised the filling of the crates with the treated batch, insisting on an equal weight with the control batch stored in bulk.

Three levels of sorting were established :

- sorting at harvest;
- sorting before storage;
- periodical sorting of both stocks every fortnight in order to determine losses for each storage method.

It should be noted that pre-storage sorting preceded the weighing and treatment of the batch stored in crates, so as not to bias the results of the trial.

The products used in treating the potatoes were Lirotect 450 SC (fungicide) and Luxan Gro-Stop 300 EC (anti-sprouting treatment). The purpose of these treatments is on the one hand to prevent potato diseases and on the other to counter sprouting in the tubers treated.

### ***Results achieved***

The final goal of the trial was to bring about improvements in the marketing of potatoes by the Sikasso potato growers. This required the adoption of one or more methods of storage which would reduce the level of losses.

Comparison of the two storage techniques (traditional and modern) is revealing. The provisional results<sup>2</sup> indicate that treatment and storage in crates helps reduce losses in all the varieties shown in Table II – 6, with the exception of the variety Lola, for which losses are almost identical for both storage techniques.

**Table II – 6 : Comparison of losses by variety and by storage technique after 60 days' storage.**

Variety	Quantity stored (kg)		Quantity (kg) after 60 days' storage		Quantity lost (kg)		Percentage loss by weight	
	Traditional System	Improved System	Traditional System	Improved System	Traditional System	Improved System	Traditional System	Improved System
CLAUSTAR	17710	17710	15307	16196	2403	1514	14	9
PAMINA	3300	3300	2749	2973	551	327	17	10
ATLAS	250	250	224	234	26	16	10,4	6
AIDA	925	925	805	857,5	120	67,5	13	7
SAHEL	250	250	224	234	26	16	10	6
LOLA	250	250	192,5	195	57,5	55	23	22

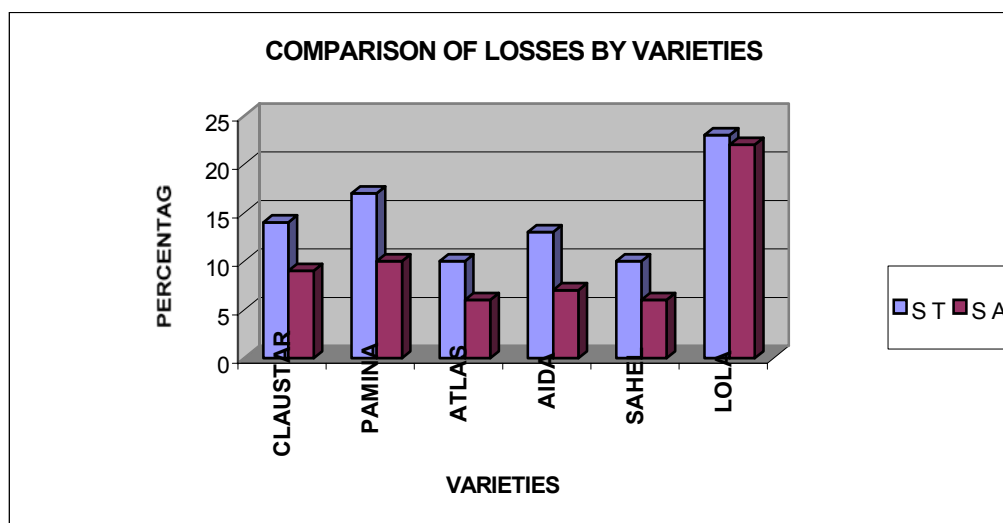
**Source :** AMATEVI

Table II-6 shows that for all varieties except Lola losses under traditional conditions were almost double those with improved storage. Even in the case of Lola it is very likely that the poor response of this variety was due to the poor quality of the product before storage, resulting from poor production or post-harvest practices.

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<sup>2</sup> The trial continues until September 2000 and the final report by AMATEVI, which will provide the definitive results, will only be available at the end of September.

**Figure II – 1:** Comparison of losses by variety and by storage technique after 60 days' storage



The table and the figure above show that compared to the traditional system of potato storage the improved system reduces loss during storage. The following points demonstrate the advantages of the improved method :

- Reduction in loss during storage, thanks to the use of fungicide ;
- Easier identification of rotten tubers ;
- Facilitates the ventilation of the product during storage ;
- Reduced sprouting, thanks to the use of the anti-sprouting treatment ;
- Better management of space in the storage area.

In addition to comparing the two storage techniques, the trial allowed the gathering of data on the effect on outcomes of the type of premises used for storage. It should be noticed that three types of premises are currently used for the storage of potatoes. These are :

- The traditional shed ;
- The improved shed with thatched roof ;
- The shed in mud-brick with corrugated iron roof.

The improved shed with thatched roof is by far the best adapted building for the storage of potatoes. This shed, unlike the traditional shed and that with the corrugated iron roof, keeps cooler and is better aired.

In connection with the trial, it was planned that AMATEVI would provide advice to producers on the different stages of production and on improved storage technique.

In terms of training in production, AMATEVI had already initiated, long before this collaboration with the CAE, an extension program on potato production techniques. However, more work is still needed to train farmers and to make them aware of suitable production techniques that facilitate the storage of the product (choice of seed varieties, dosage of fertilizer, harvesting etc.).

As for the promotion of techniques of treatment with fungicide and anti-sprouting agents, this concerned, above all the growers who volunteered for the trial. The latter learnt the technique and the reasons for the use of chemicals. Others, not involved in the trial, were brought in on this educational aspect, so that even more potato producers could benefit. Questions remain to be asked as to the acquisition of chemicals by the peasants and the coverage of these new costs from the sale of the harvest.

### **Conclusions**



Despite the delay in the launch of the trial, due in part to difficulties encountered in the production of the crates, the provisional results already demonstrate the advantages of the improved storage technique over the traditional. This collaboration between the Center and potato producers also led to the identification of other constraints on the subsector, for example :

In addition to the difficulties with storage, the potato subsector currently suffers from :

- Difficulties with finance for the acquisition of inputs (seed, fertilizer, pesticides) ;
- Lack of producer organization into associations ;
- Difficulties in the placing of product on domestic and West African markets.

Nonetheless, at Sikasso the growing of potatoes is considered to be one of the ventures that will allow cotton producers to diversify their sources of income. Furthermore, the potato is a product exported to neighboring countries. It is therefore desirable that support organizations such as CAE should make efforts to :

- Better organize producers for the purchase of inputs and grouped sale of their harvests ;
- Facilitate the access of producers and other actors to formal credit ;
- Make producers aware of suitable techniques for production, post-harvest operations and storage; and to provide them with training in such ;
- Encourage the emergence of real businesses importing inputs and exporting potatoes ;
- Carry out a study to inform actors in the subsector about production costs and the operation of markets for potatoes.

#### **2.2.5 – Promotion of the storage and drying of shallots at Niono and Bandiagara**

##### **Context, objectives and justification**

The production of fresh shallots is expanding rapidly in the *Office du Niger* zone and on the Dogon Plateau. In 1999, production was estimated at 78,000 tons in the first area, and at 25,000 tons in the second. In the shallot subsector, as in others, the CAE endeavors to increase the capacities of agribusinesses or other local organizations so they may take greater advantage of the opportunities that exist. However, to ensure lasting impact, the selection of beneficiaries is fundamental. Consequently, the following activities were selected for the shallot subsector :

- to increase the fresh shallot storage capacity of the women of Foabougou (in the *Office du Niger* zone), with a view to improving the organization of the marketing of the product ;
- to increase the production capacity for sliced dried shallots for the coordinating committee of the 35 shallot drying groups at Bandiagara (Mopti). This increase in processing capacity needs to be accompanied by improved control of hygiene if the product is to be offered for export.

In order to carry out the activities identified above, the CAE staff, after carrying out a diagnostic analysis, adopted the following objectives :

- assistance to the Djanto Yéréla women's group at Foabougou in the acquisition of a shallot storage warehouse of 100 tons capacity ;
- identification and trialling of new drying technology for the Coordinating Committee of the 35 dried-shallot production groups at Bandiagara.

##### **Implementation and results achieved**

The activities carried out were :

- for the Foabougou women's group :
  - the determination and validation of technical specifications for a building for the storage of shallots over 6 or 7 months, with a capacity of 100 tons. The study was carried out by four West African experts, two from Mali and two from Burkina Faso.

- involvement in the execution of this activity of partner organizations such as the *Office du Niger*, the URDOC and the IER, and above all the FCRMD (*Fédération des Caisses Mutuelles du Delta*) who are prepared to participate.
- for the 35 dried-shallot production groups at Bandiagara :
  - assistance towards participation in the Mopti and Sikasso Trade Weeks so as to promote the product ;
  - the development of a plan of action covering training, information and technical assistance to provide a package of support for these groups.

Various drying techniques were identified by a search of the literature and discussion with food technologists. The problem lies in matching costs to the technical standard of the equipment and the management capacities of the beneficiaries.

Promotion activities for dried sliced shallot were carried out at the national level (participation in 2 fairs). Due to the poor hygiene of the Dogon Plateau product and low production capacity, promotion in Europe is not feasible.

There was no longer any need to carry out a study on market-gardening opportunities in the *Office du Niger* zone, given that the CAE had been asked to assist in the marketing of shallots. The Center organized instead a study of ways of increasing the storage capacity available to a women's organization in the zone. This study should lead to the creation of a collective storage warehouse of high capacity (100 tons).

## Conclusions

In the course of Workplan 3 the activities undertaken in the shallot subsector will allow the CAE to field test (at Foabougou) a prototype for the large scale storage of shallots. The storage sheds of the "retail type" that exist in the zone are on the one hand of very small capacity (for a group of more than 100 women), and on the other hand do not satisfy the theoretical requirements for storage. Once the larger warehouse has been tested, an extension program will be developed for future years with a view to the better organization of marketing.

Improvement in hygiene standards and an increase in the quantities available should allow the CAE to support the Coordinating Committee of the 35 drying groups of the Dogon Plateau in carrying out a promotional campaign for the product in certain countries (Senegal, Côte d'Ivoire, Guinea, Gabon) or certain ethnic markets (France, United Kingdom).

### 2.3 – Meat and livestock subsector :

Two objectives were set for the meat and livestock subsector. These were :

- To improve the availability of balanced feed-rations for livestock and poultry ;
- To develop sub-regional trade in livestock.

#### 2.3.1 – Improvement in the availability of balanced feed-rations for livestock and poultry

**Table II- 7 : Performance indicators for improvement in the availability of balanced feed-rations for livestock and poultry**

Intermediate Results	Operational Objectives	Baseline Indicator	Year 2 Indicator/ Target	Result achieved	% achieved
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Improvement in the availability of balanced feed-rations for livestock and poultry	Establish a livestock and poultry feedmill	-	Mill to produce feed for livestock and poultry operational	Updating of feasibility study on smaller scale	Identification of promoter in progress
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**Source** : CAE

### Context, objectives and justification

The commercial feed industry that is developing in Mali is an important segment of the livestock-rearing subsectors that have the potential to make a positive impact in the short term on increasing productivity and value added. The development of the livestock and poultry feed industry and the improvement in feed management practices on farms have thus become a major focus of the CAE's activities in the livestock-rearing sector.

The most important factors leading to improvement in animal productivity and to value added are :

- the application of improved feeding techniques using high-quality balanced rations formulated to maximize production while minimizing costs ; and
- the existence of production systems capable of making efficient use of high quality commercially available rations.

With a view to focussing its efforts on the opportunity presented, the CAE commissioned a feasibility study on the creation of an industrial feed-production plant in Mali (see photographic illustration of prototype in annex). This study, carried out in October 1999, concluded that domestic market for feed was capable of profitably sustaining an industrial feed-production plant. While the study did not examine the possibility of regional market opportunities, the conservative estimates made of the domestic market for livestock feed would suggest that the unit proposed, with a capacity of 50,000 metric tons, would satisfy 50% of effective demand.

This pre-feasibility study provided a basis for activities to promote business investment during the period covered by the present Workplan. These activities focussed on :

- The finalization of the feasibility study and the presentation of its most important conclusions to potential investors ;
- The identification of potential investors ;
- The transformation of the present study, in collaboration with promoter(s), into a viable investment proposal ;
- Assistance to promoter(s) in finding the finance necessary for the creation of such a plant.

### Execution of activities

The feasibility study was finalized at the beginning of January 2000, and a round table under the leadership of the two consultants who carried it out was organized for the beginning of February, in which 12 potential investors participated. The most important conclusions and recommendations of the study were presented, but the CAE decided to keep the technical and financial details confidential until a firm commitment to investment was imminent. The great majority of potential investors felt that an industrial feed-production plant on such a scale was too ambitious a project at present, but one investor did express a serious interest in continuing discussions.

It was decided to work in close collaboration with this investor, given the interest he expressed and a recognized capacity to mobilize the financial resources necessary for such a project (estimated at \$4.5 million, including operating capital). In collaboration with this promoter, efforts were made to turn the feasibility study into an investment proposal.

On account of the high initial costs of investment, the low to modest margins and the need to produce standard formulations in high volume and at high quality, a detailed sensitivity analysis was carried out at the promoter's request, so as to estimate profitability and cash flow in different conditions. Studies and supplementary investigations were also carried out :

- To assess the feasibility of different investment options (small- and medium-sized production units, alternative production equipment, alternative sources and configurations for a commercial industrial unit) ;
- To verify farmers' willingness to pay more for improved, high-quality, balanced rations ; and
- To identify a package of support activities the CAE could undertake to attenuate some of the constraints hindering the development of a livestock-feed sector in Mali and thus to facilitate the establishment of an industrial plant.

### Results achieved

Sensitivity analyses were carried out to evaluate potential profitability and cash-flow variation in different conditions. The production variables included: mixed products ; the quantity of finished feed produced ; market prices for finished feed; and estimates for annual inflation. As a result of the volatility of market prices for the main ingredients in feed, the analyses also considered various hypotheses regarding the market price of raw materials and their potential impact on margins.

A specialist in the production and marketing of livestock-feed was recruited to evaluate alternative investment possibilities to those proposed in the feasibility study. More specifically, the consultant examined the option of installing feed-production units at farm level, together with alternative schemes of capital investment for the commercial production unit.

The key issue is to ensure that producers understand the need to produce high-quality, balanced rations, and also how to use them as effectively as possible so as to achieve their production objectives. To do this the CAE carried out the following activities :

- A series of training sessions were organized for livestock and poultry farmers and manufacturers at Bamako, Ségou and Sikasso, focussing on the production of improved feed and on improved feeding techniques, including cost management (see section on training for results) ;
- The publication of a 3-volume manual (on fattening, dairy production and poultry-rearing) entitled 'Manual of Good Practice in the Feeding of Livestock and Poultry.' This manual will be on sale from January 2001.

## Conclusions

One potential investor remains very interested, but efforts must be made to meet concerns regarding the options for capital investment. The CAE hopes to have several detailed options prepared for consideration, following which firm commitments to investment should be obtained and a detailed investment proposal worked up. In the meantime, study visits to plants similar to that proposed for Mali should allow the investor to get a better idea of the technology, the operations and the promotional efforts required to introduce such 'new' products to Mali.

For its farmer customers, the CAE envisages the organization of trials at a number of sites in different regions, using imported balanced rations. These trials are intended to demonstrate to farmers the improvements in production that may be achieved by the use of such feeds in controlled but practicable conditions.

The goal is to find customers for high-quality commercial feeds and to develop operational activities in the promotion of feed which might then be taken on as part of the marketing program of an industrial feed-production plant when established. When integrated with other aspects of marketing discussed above, these trials will enable the CAE to develop a plan for a regionally-focussed marketing program for commercial feed. This plan, to be further refined in collaboration with the promoter, will allow for the speedy launch of marketing activities once the plant is operational.

### 2.3.2 – Training in the improvement of livestock feed and feeding technique

**Table II – 8 : Performance indicators for improvement of livestock and poultry feed and improvement in feeding technique**

Intermediate Results	Operational Objectives	Baseline Indicator	Year 2 Indicator / Target	Result achieved	% achieved
Improve animal feeding technique	Train farmers and raise their awareness of improved animal feeding techniques	-	% of farmers able to formulate a balanced ration	More or less 50% of farmers trained	50%

**Source** : CAE

### 2.3.3 – Development of sub-regional trade in livestock

The strengthening of the export trade in livestock and products of animal origin is one of the most important of the CAE's activities in the livestock subsector. The Center has therefore put particular stress on activities leading to the opening of new markets and/or the penetration of existing market niches that allow increases in added value.

To do this, activities were undertaken to strengthen partnership with economic operators in the sector, that is to say, those operators who have the capacity to establish partnerships with their opposite numbers in the sub-region so as to develop the regional trade in animal products. It is through this kind of partnership and support from CAE that it was possible to exploit market opportunities.

It is in this context that the CAE is intending to support in September 2000 a promotional trial export of smoked beef shins and edible skins to the Ghanaian market by two Malian economic operators. This trial has several objectives :

For the economic operators :

- To become better acquainted with all the stages of the export of beef feet and comestible skins to the Ghanaian market, as a necessary preliminary step to entering into contracts, in the medium term, for the export of these products in great quantities ; and
- To penetrate and to secure a niche in the Ghanaian market so that in future other opportunities for the export of products of animal origin may be identified and exploited.

For the CAE :

- to help refine its strategy and approach to the development of regional trade, through a better understanding of the channels for the export of products of animal origin to the Ghanaian market.

### Context, objectives and justification

One of the most important areas on which the CAE program for the livestock sector has been focussed is the commercial development of the livestock-feed subsector in Mali. The most important objectives of this program are :

- To improve the availability to farmers of high-quality balanced feed-rations for livestock and poultry through the creation of an industrial feed-production facility ;
- To train farmers and feed-manufacturers in improved techniques for the formulation of rations, and in improved feeding practices, quality control and feed-cost management.

The expected short-term impact of this program is farmers' increased capacity to nourish their animals and poultry more effectively while controlling costs. In the medium term, these farmers will constitute the customer base for the industrial production of high-quality balanced feed.

The strategy adopted for the elaboration and implementation of the training program on the feeding of livestock and poultry is based on :

- the identification of the beneficiary group ;
- the organization and technical content of the training ;
- practical technical support for participants in the formal training sessions.

### Implementation

Regional training programs were developed for producers of animals and poultry in the regions of Ségou and Sikasso, taking account of the lessons learnt from an initial program organized in September 1999 for producers of meat, milk and poultry in the peri-urban zone of Bamako. A preliminary evaluation of this program clearly demonstrated the need for :

- on-site evaluation of the real production practices of potential participants, before their selection ;
- a 'plan of action' for the training sessions by each participant, to serve as the basis for later support and for the monitoring and evaluation of the results and impact of the training ; and
- a structured post-training program for participants, focussed on consultancy and technical support with a view to the implementation of the individual action plans.

The training session materials in the regions, based on those used at Bamako, were adapted to the specific requirements of producers, following contact meetings with producer groups and surveys in the field intended to assess the needs of potential participants.

## Results achieved

The training held in Bamako focussed on the basic concepts of :

- norms and nutritional standards for livestock and poultry feed ;
- more effective feeding and costs control.

A group of 14 livestock farmers and 15 poultry farmers were selected, to ensure the possibility of monitoring the results and impact of the training, and hence also to identify future training needs. They were chosen on the basis of their interest in participating in monitoring activities and of the commercial scale of their current production.

After eight months of monitoring and technical advice, it was noted that :

- the percentage of farmers using physiological production criteria in determining nutritional requirements and formulating rations had increased from 10 to 30% ;
- the percentage of farmers using formulated rations had increased from 20% to 50% ;
- the percentage of farmers evaluating their feeding programs on the basis of feed cost per unit of product (liter of milk or kilo of meat) had increased from 10% to 50%, and from 57% to 86% for poultry producers ;
- the percentage of poultry producers using rations formulated on the basis of physiological production criteria increased from 57 to 78% ;
- both stock farmers and poultry farmers had begun to keep records of feed costs, but only in one case was a producer able to provide approximate details of feed cost per unit product ; and
- in general, the producers are requesting a further program of assistance to help them analyze the nutritional composition of their rations and the principal ingredients of the feeds, so as to be able to ensure quality control.

A training program similar in content to that offered to farmers and manufacturers in the Bamako zone was organized at Sikasso for the two first weeks of June 2000. The sessions were attended by 25 livestock farmers and poultry producers (including 5 women).

In general, the sessions were well received by participants, although many of them asked for additional training in animal health, while the manufacturers of poultry feed asked for more detailed technical training in the formulation of rations by the use of computer programs, and in improved techniques for milling, mixing and packing (see photographic illustration in annex).

As a consequence of the lessons learned at the first training course at Bamako, steps were taken at Sikasso and Ségou to :

- check the standard of potential participants' existing practice before their selection ;
- ensure that participants were committed to following an action plan after the course ;
- to develop a program of post-training support, monitoring and evaluation, focussed on the implementation of participants' action plans.



In the context of the monitoring activities intended to help participants in the implementation of their action plans, formal training will be provided on :

- the formulation of rations for feed-lot cattle ;
- the use of urea-treated straw as supplementary fodder ;
- the weighing of animals through the fattening cycle ;
- the recording and classification of feed costs.

In June, the town of Ségou also saw the organization of a training program on animal feeds and feeding for feed-lot operators and poultry producers (26 participants in total, including 3 women). The training sessions were well attended by participants.

Beneficiaries of the training who responded to the questionnaire felt that the modules were relevant, and were particularly pleased with the coverage of ration formulation and feeding plans for store-cattle and poultry. The poultry producers interviewed had already seen a reduction in production costs through the application of improved feeding techniques learnt during training (use of cotton-seed cake, twice-daily distribution of food).

For the feed-lot operator the most important constraint on the implementation of activities is the lack of financial resources (insufficiency of operating capital). As a result of the training sessions recently held, the post-training monitoring over the coming months will allow identification of the changes brought about and the impact these have had.

For feed-lot operators, monitoring activities will focus on the implementation of a series of measures intended to improve the efficiency of the fattening cycle, including :

- the formulation of rations and the use of urea-treated straw ;
- the weighing of animals through the fattening cycle ;
- control of feed costs.

Poultry producers will focus on :

- techniques for the preparation of improved rations ;
- more effective feeding practices ;
- the recording and classification of costs.

At the same time, a trial feed-quality control program has been developed which puts a producer group (of 15 commercial production units) in the Bamako area in contact with the Animal Nutrition Laboratory and also the CRRA at Sotuba. The goal of this program has been to make producers aware of the importance of using balanced feeds. The objectives were:

- to demonstrate to farmer-producers the advantages of a quality control program for feed in terms of animal productivity and feed costs ;
- to improve the quality of services provided by the Laboratory of Animal Nutrition, and CRRA – Sotuba, through increasing their capacities to provide customers with analyses and advice ;
- to create a group of commercial producers who will establish a quality control program as part of their routine practice in the management of animal feeding.

This activity was not carried out this year. It will be rescheduled for the Program of Work for 2000-2001.

## SECTION III

### SUPPORT TO AGRIBUSINESSES, GROUPS & ASSOCIATIONS

In order to support development activities in agribusiness commodity subsectors, the Center offers assistance to agribusinesses in the following fields :

- Information ;
- Training ;
- Business management ; and
- Marketing.

#### 3.1 – Support for improved availability of market and technological information :

**Table III – 1 : Performance indicators for improvement in the availability of market and technological information**

Intermediate Results	Operational Objectives	Baseline Indicator	Year 2 Indicator/ Target	Result achieved	% achieved
Improve availability of market and technological information	Improve availability of information from CAE	-	60% of customers having taken concrete action on basis of information received through CAE	75 % of customers receiving information, but few have taken commercial action on this basis.	Very few customers make use of commercial information provided, as a result of upstream constraints (finance etc.). Technology information appreciated by customers, who cannot purchase for lack of funds
	Improve availability of information from Mali	-			
	Improve availability of information from Africa	-			
	Improve availability of information from the rest of the world	-			

**Source** : CAE

The methods used for the dissemination of information have been :

- the publication of bulletins ;
- *à la carte* information research service ;
- the provision to customers of an Internet center (the Cyberspace) to send e-mails and to explore the Web.

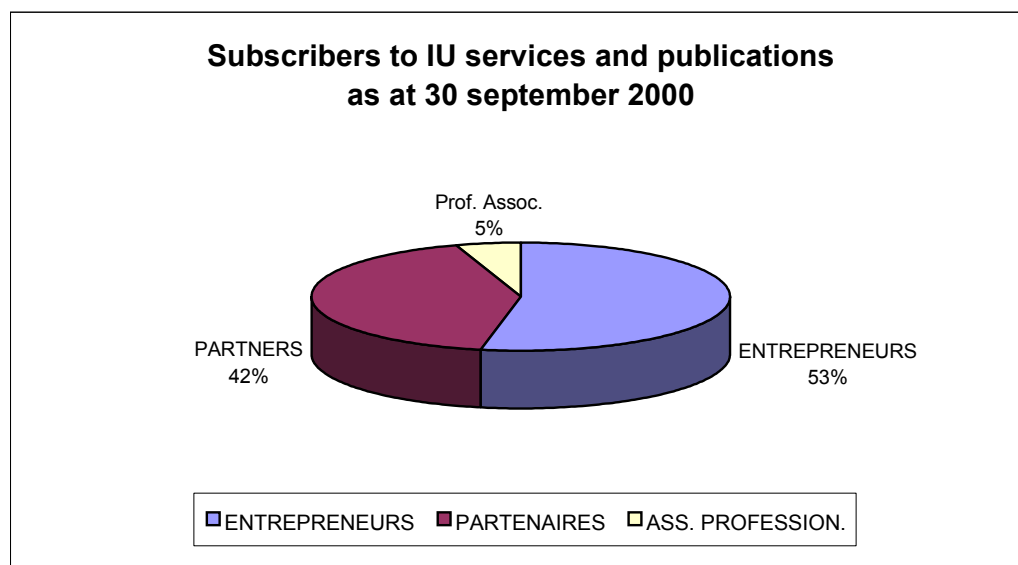
## Results achieved

In the field of information diffusion, activities have related to :

- the strengthening of the network of information-provider partners ;
- the diffusion of market and technological information.

The CAE today has 98 subscribers to its publications and services, of which 53% are agro-entrepreneurs, 42% are partners (public services, projects, organizations etc.) and 5% are associations of agribusiness professionals. These subscribers regularly receive Center publications. In addition to publications, certain customers benefit from other services such as the à la carte information research service, the CAE Internet center and the documentation center.

**Figure III - 1 : Composition of subscribers**



**Source : CAE**

### **3.1.1 - Strengthening the network of information-provider partners**

The process of identifying information provider partners in West Africa, begun in the 1<sup>st</sup> year, has continued. Missions were organized to visit Mauritania, Niger and Guinea.

The trips to these countries allowed the Center to make potential partners aware of its existence and of the tasks which have been assigned to it. Some partners were offered the possibility of signing a collaboration agreement to formalize the exchange of information. In general, the types of organizations met with were :

- public services charged with responsibility for food security ;
- market information systems ;
- agricultural statistics services ;
- consular offices and private import-export agencies.

It should be noted that this network of partners, in addition to exchanging information with the Center, also helps in the mobilization of African experts for Center consultancies.

### **3.1.2 - Establishment of a sub-regional network of market information systems (MIS)**

The work of the 2nd Sub-Regional Conference on Agricultural Prospects, held at Bamako on 7th-9th February 2000, under the auspices of the APCAM and the *Observatoire des Marchés Agricoles*

(OMA), and jointly organized by the CAE and the *Projet d'Appui aux Systèmes Décentralisés des Marchés Agricoles* (PASIDMA), led to the establishment of two sub-regional networks :

- a network of import-export traders in agricultural produce ;
- a Network of Market Information Systems (MIS) to support the activities of the traders' network.

Since these two networks are, like CAE, concerned with cereals, fruits and vegetables and livestock, APCAM, the PASIDMA and the OMA participated with the Center in the organization of the 2nd conference, whose aim was to :

- determine the deficit or surplus in respect of the three sectors of agribusiness in each country (cereals, fruits and vegetables, animal products) ;
- communicate information on factors that will influence the development of agricultural markets during the current marketing year ;
- create the foundations for a network of sub-regional import-export traders and for the network of Market Information Systems.

In the longer term, the sub-regional network of agribusiness traders will facilitate trade in these products between member countries, thanks to improvements in the availability of information on supply and demand (MIS network) and the fight against barriers to trade.

### **3.1.3 - Improving the availability of market and technological information**

#### **Distribution of a bi-monthly information bulletin**

The bi-monthly information bulletin provides the Center's partners with an overview of its activities and products. The bulletin keeps partners regularly informed on the progress of current activities and the final results of those that have been concluded. Four out of six scheduled issues were published, together with two special editions. Each special edition of the bulletin dealt with a specific activity.

The first special edition covered the campaign against fruit flies, an area of work in which the IER, the CIRAD and the Center were all involved together. The bulletin was essentially intended for actors in the mango subsector (producers, exporters, researchers and popularization workers). The second special edition, currently in the press, makes available general documentation on the UEMOA.

### **The publication of market and technological information**

Information provided to the Center's customers is of many kinds :

*Price information bulletins* are sent in the main to exporters. The information allows them to monitor weekly price changes in European and Middle Eastern markets. The small-scale survey carried out among a restricted sample of the Centre's customers shows that 75% of businesses have at one time or another had recourse to the services of the Information Unit in searching for information. The results have had very little result on decision-making within the business (1 case in 8), but have rather led to a better knowledge of standards, technologies, supplier addresses and market prices.

The Mango Information Folder (*Pochette mangue*) is in the process of finalization. This will give basic documentation on mangoes, covering production, processing and market information. It will also include extracts from education-sheets and training modules developed for certain actors in the mango subsector.

Articles have been published in the magazine *Economie Commerce* in order to disseminate information about products (rice, mango etc.), to draw up an assessment of an export campaign (green beans, mango) or to inform partners of certain of the Center's activities (the *Service de Soutien aux Businesses* or Business Support Program).

### **A la carte information research**

The à la carte information research service responds to **customer requests**. Questions very often relate to information on equipment suppliers, importers' addresses, processing techniques or standards. These searches for information are carried out by the staff of the Information Unit, or by agro-entrepreneurs themselves using the Internet center.

The CAE's **Internet center** (the *Cyberespace*) is used above all to make contact with partners (suppliers and/or clients). Because of the poor connection, users of the space do little research on the web themselves, preferring to entrust such work to CAE staff. Table 2 shows the number of users of the Internet center every month from January to September 2000.

**Table III - 2 : Statistics on the use of the CAE Internet center (the *Cyberespace*)**

	Jan 2000	Feb 2000	March 2000	April 2000	May 2000	June 2000	July 2000	Aug 2000	Sept 2000
No.of users	14	17	57	54	73	64	40	40	59

Source: CAE

### **Dissemination of information through the Agro Mali web-site**

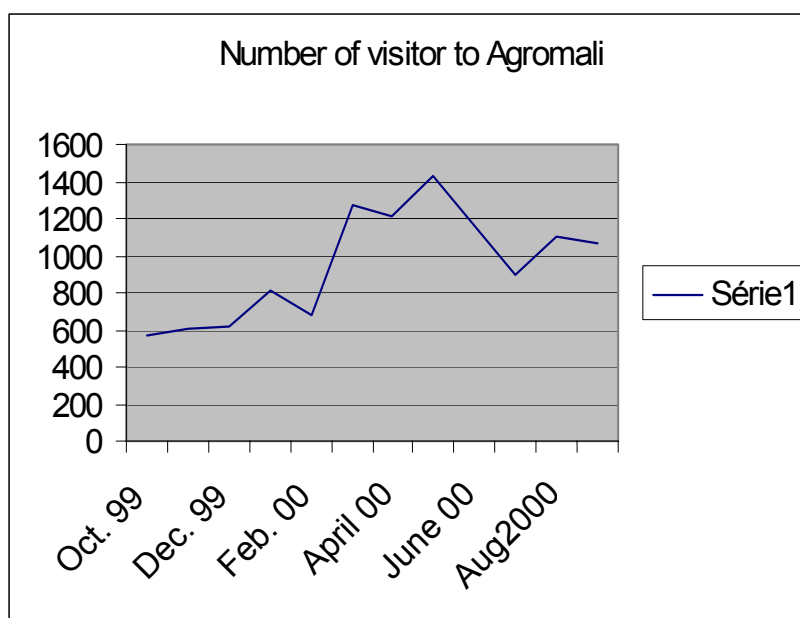
The Agro Mali web-site allows surfers access to much of the Center's information. The site, continually updated, is well frequented, with more than 800 visits per month on average. Most visitors are based in the USA. Table 3 and Figure 2 show the number of visitors to the site from October 1999 to July 2000.

**Table III - 3 : Visitor statistics for the Agro Mali site**

	Oct 99	Nov 99	Dec 99	Jan 00	Feb 00	Mar 00	April 00	May 00	June 00	July 00	Aug 00	Sept 00
# Visitors	570	609	623	815	683	1276	1029	1428	1158	895	1103	1067

**Source :** FINTRAC

A review of the site is currently being carried out, with a view to making it more user-friendly and better able to meet users' needs. New sections will be added, such as commodity subsector profiles and presentations of agribusinesses. In addition, the intranet site, currently under construction, will be integrated with Agro Mali so as to facilitate networking and access to different working documents. This intranet site will be accessible via a username and password. The first pages are being put together, while the structure has already been established.



In the course of the second year of activities, the CAE's network of information providers has grown, with new partners from Niger, Mauritania and Guinea. The dissemination of market and technological information has primarily concerned the publication of weekly prices for fruits and vegetables in European and Middle Eastern markets, and the drafting of a background information document on the mangoes. Assistance has been given to businesses to allow them to attend trade fairs and similar events. Finally, arrangements were made to allow CAE customers access to the new information and communications technologies (Internet).

The delay in the organization of the 2nd Sub-Regional Conference on Agricultural Prospects did not help publication of the directory of sub-regional import-export traders. It was planned that the Center should provide financial assistance to the OMA for the publication of the directory. Work on the information-gathering stage is still in progress, with assistance from national networks.

**Assistance to partners in the development of web-sites (Computing Resources Audit)**

This year the LCV, the *Office du Niger* and the IER benefited from Center support in the development of their web-sites. An audit team visited the *Office du Niger* and the Central Veterinary Laboratory to assess their computer equipment and to make recommendations to these organizations as regards the integration of the new information and communications technologies. The IER was not concerned in this diagnostic phase, as it is well provided with computing resources.

In parallel with the computing resources audit, the Center also identified the training needs of the future web-site managers, who in late March, with Center assistance, were given a training course on site development and web-page construction.

### **3.2 – Training of agro-entrepreneurs and associations/groups :**

In the first quarter of Year 1 the training component of the project was expanded to cover the needs of the communications program segment. Year 2 activities thus focussed on three major themes :

- the training of agro-entrepreneurs in the basic principles of business management ;
- targeted training for associations and other groupings of economic actors ;
- the development and implementation of a general communications strategy for the CAE.

**Table III – 4 : Performance indicators for the training of agro-entrepreneurs and groups/associations**

<b>Intermediate Results</b>	<b>Operational Objectives</b>	<b>Baseline Indicator</b>	<b>Year 2 Indicator / Target</b>	<b>Result achieved</b>	<b>% achieved</b>
Improve the management capacities of entrepreneurs and associations	Train entrepreneurs in business management	14	60 % of participants applying their new knowledge	60 % of participants applying their new knowledge	More than 100 %
	Train associations and groups	1			

**Source :** CAE

This concerns the support provided to businesses, associations and groupings in order to strengthen their capacities in terms of :

- business management ;
- quality assurance ;
- use of the internet ; and
- advocacy.

See the sub-section on the meat and livestock subsector for full details.

#### **3.2.1 - Training in business management for agribusinesses, associations and groups**

##### **General and specific objectives**

The general objective of business management training is to increase businesses' access to bank credit so as to facilitate their development and above all their long-term viability. More specifically, the training provided :

- increases promoters' capacity for business management ;
- establishes business finances on a sounder basis ;
- supports promoters in the development of their business plans ;
- supports the promoters in the design of a real marketing strategy based on the control of production costs and an understanding of markets.

##### **Implementation**

### Zones and sectors affected

During the second year the training program was extended in terms of the modules offered and the number of sites where training was carried out.

Training sites outside Bamako were Koutiala, Karangana, the *Office du Niger* zone (Ségou) and the OHVN zone (Bougouni). In these localities the targets were the groups of professionals, such as cereal merchants, onion producers and maize processors, receiving assistance from the CAE. Other training sites were Sikasso town, Mopti and Koulikoro.

In the course of this second year, 12 business management modules were developed. In addition to these generic modules, applicable to all businesses in the subsector, the CAE also offered other modules intended to meet the more specific requirements of a subsector, such as the training of livestock and poultry producers in improved feeding and feed formulation.

### Stages of training session organization

- Identification of training needs and the selection of one or more modules ;
- programming of the session ;
- selection of one or more trainers from among members of the trainers' network ;
- development of terms of reference ;
- publication of a notice about the session in the newspapers and identification of entrepreneurs to be trained ;
- preparation by the trainers of the session plan and participant's work-book ;
- training ;
- post-training monitoring.



## Resources mobilized

To facilitate training in business management, a trainers' network was set up with 16 members. In addition to the members of this network, 20 other trainers not members of the network also participate in training. Network trainers have themselves received specific training to improve their capacity for intervention.

This reinforcement of the capacities of network members is intended to :

- promote business training for agribusinesses ;
- to lay the foundations for the long-term continuation in other hands of CAE's activities in the field.

In addition, two seminars in the methodology of adult education were organized for the network, one of which attracted 21 participants, the other 6.

## Results achieved

The following table shows the subjects of the various modules, and the number of sessions provided.

**Table III - 5 : Modules and number of sessions provided**

N°	Modules	No. of Sessions	No. of participants	Live stock	Fruit & Veg. & Alternative commodities	Cereals
1	Business	8	146	24	10	112
2	Costs	7	108	24	6	78
3	Markets	3	45	17	*	28
4	Finance	3	40	4	2	1
5	Stock control	6	79	23	38	18
6	Business Plan	4	43	25	16	2
7	Commercial strategy	4	32	22	20	*
8	Basic accounts	5	77	22	22	33
9	Sales & Negotiation Technique	3	24	8	15	1
10	Strategic Planning	3	24	8	15	1
11	Presentation of funding applications	1	12	4	7	1
12	Basic finance	1	20	10	9	1
13	Quality test	2	49	4	45	*
14	Use and management of Feed	4	43	43	*	*
15	Business Plan and Cash Flow	4	67	*	*	*
	<i>TOTAL</i>	<b>54</b>	<b>742</b>	<b>238</b>	<b>205</b>	<b>276</b>

**Source :** CAE

The figures above indicate that training in business management was particularly favored this year, with a choice of 12 modules out of 15 in total. The most important objective of this management training is to enable participants to take concrete action: decision-making, behavioral changes, improvements in management systems.

The results of the survey of entrepreneurs undertaken in the course of the initial research show that more than 80% were satisfied after having taken several modules. The 3 modules most appreciated were :

- The Business Plan ;
- Strategic Planning ; and
- Know your Costs.

Those questioned were able to give examples of improvements in their own businesses : more than 60% reported improvements in business dealings and in the productivity, turnover and profitability of their business.

Constraints on these favorable developments were essentially related to the business environment in general, that is to say to weaknesses in the juridical framework and the unreliability of contracts, which lead to reluctance on the part of banks attempting to avoid the excessive risk connected to projects which they feel are insufficiently secure. It is this which explains the lack of finance either to put new understandings into practice or to grow ones business.

Those interviewed at Bougouni were also very satisfied with the modules ('Know Your Business' and 'Know Your Costs') offered by the CAE, having a clear preference, however, for the cost module ('Costs' 67 %, 'Business' 33%), which gave them access to an analytical framework for classifying costs so as to calculate prime costs and their impact on margins, including, finally, the profit margin. The module 'Know Your Business' gave them new approaches to marketing. More than 60% of respondents had changed or diversified their methods of work ; 85% had succeeded in increasing their turnover by some 67% as a result of the combined effect of better cost control and an improvement in business dealings.

But the most evident impact was demonstrated by the decision to keep books so as to be able to better monitor the efficiency of business activities. They were not able to say what modules might be most useful to them in the immediate future, but said that the lack of operating capital was the main obstacle to improving business performance.

The modules 'Know Your Business' and 'Know Your Costs' also introduced auto-diagnostic techniques to the associations of Karangana (Koutila) – the association of cereal merchants of Koutiala and Niono. As a result of these courses they will be better able to exploit their human resources through the establishment of work teams responsible for maintenance, purchasing of raw materials, warehousing of finished product, record-keeping and market research.

The following constraints were identified :

- problems with quality, which hinder access to potential markets ;
- the insufficiency of credit for the annual cycle of activity.

In general, however, these volunteers reported little improvement in their approach after training. The associations did however express a wish to be given training in market analysis and commercial strategy, in stock control and accounting, in finance and financial management. These modules would facilitate their access to reliable sources of finance.

### **3.2.2 – Internet training**

The goal of the introduction to the Internet offered to agro-entrepreneurs by the Center is to make them aware of the advantages this extraordinary tool of communication can afford them in the development of their businesses. More specifically, the training covers :

- use of *e-mail* ;
- and *information research on the Web*.

The training is specifically aimed at agribusinesses, and gives examples of concrete solutions to problems in the agribusiness sector.

The training began in February 2000. It is provided with the help of two trainers from the Spider ISP. Thirty agro-entrepreneurs and Center partners have received training so far, and faced with the high demand, priority has been given to Center partners and to customers who collaborate closely with the Center.

At the conclusion of the training, each participant acquires an e-mail address with a free e-mail service (such as Caramail, Yahoo, Hotmail etc.). This training has had a strong effect on attendance at the CAE's Internet center, which now welcomes more than sixty visitors per month (see Table 1), as compared to some 15 before the course was instituted.

This introduction to the internet, coupled with the services offered by the Internet center, has helped some agro-entrepreneurs search for information on the Internet, and more especially to send and receive e-mail. The training has succeeded in its objective, which was to increase access to the new information technologies.

### 3.2.3 – Training for improved quality

**Table III – 6 : Performance indicators for improvement in quality control**

Intermediate Results	Operational Objectives	Baseline Indicator	Year 2 Indicator / Target	Result achieved	% achieved
Improve quality control	Train businesses in HACCP method	-	% of businesses using HACCP method	Training in progress for 29 businesses	Two first training sessions carried out

**Source :** CAE

#### *Context and Objectives*

The establishment of proper quality control is a necessity for the agricultural sector in Mali, and more particularly for the subsector of fruit and vegetables for export. Faced by the liberalization of trade and ever more demanding consumers, only products of recognized high quality can survive the competition.

Improvements in the quality and competitiveness of agricultural produce intended for export can only come through the implementation of a system of quality assurance based on auto-verification and traceability from the field onward, through conservation and storage to the final consumer, with strict respect for the specifications laid down by buyers.

From July 2000 the European Union will be applying new controls on pesticide residues in fruits and vegetables from ACP (African, Caribbean and Pacific) countries. All agricultural produce presenting residues in excess of the maximum levels prescribed, or representing serious threats to human health, will be barred from the European market. Furthermore, Community requirements in terms the inspection of fruits and vegetables and other foodstuffs are becoming more and more rigorous.

Though a timid beginning, the West African sub-regional integration represented by the UEMOA is beginning to escape from its lethargy with the opening of borders to products of UEMOA origin from January 2000. This potential market represents a priceless opportunity, and only competitive products of good quality will be able to survive the competition.

Through its combined activities, the CAE supports operators in ensuring that quality control is integrated in the process by which products reach the market. To achieve results in this field the assistance offered has concerned :

- awareness-raising and information ;
- training based on the dissemination of essential tools and methodologies for total quality management within agribusinesses ;
- the institutional strengthening of organizations responsible for assisting operators in terms of quality control, conformity and certification ;
- support to inter-professional organizations to bring about greater involvement in national decision-making on quality policy.

#### *Implementation of training and results achieved*

Once the quality improvement program was established with the help of an independent consultant the following activities were carried out :

- quality diagnosis in agribusiness ;
- awareness-raising ;
- training ;
- and the creation of quality circles.

The program is voluntary, and will lead within the year to the implementation of a validated methodology of quality assurance for the first time in Mali. The approach is based on both training and consultancy advice.

### **Training**

In the so-called preparatory phase, participants were selected and the educational materials designed for the first module of the training program in quality management, which took place between 10th and 14th July. Four main modules were adopted, and 29 businesses were selected :

- 24 classed as micro- or small-sized businesses ;
- 5 classed as medium- or large-sized.

As regards the commodity subsectors and fields of activity involved, the group included the three main subsectors (Cereals – Fruits and Vegetables / Alternative commodities – Meat and Livestock) as well as the activities of food-processing and agricultural export.

On the basis of site visits to investigate quality problems and the various obstacles encountered by these businesses, and after interviews with participants, a training plan was designed whose principal goals were as follows :

- understanding of the different meanings of the word ‘quality’;
- familiarity with the most important approaches to the establishment of quality assurance in the food industries ;
- establishment of quality circles ;
- informed use of the most important tools of quality control.

**To achieve these goals, a first training module, entitled ‘General Ideas on Quality Management,’ was provided to participants.**

### **Consultancy advice**

The consultant’s terms of reference require him to assist the CAE in stimulating quality-networking and to help businesses and professional organizations in the implementation of good quality-management practice.

The period covered by the present report saw assistance given at three different levels :

- The work of the commissions of the Basic Program for the Promotion of the Agricultural Commodity Subsectors, initiated by the Coordinating Committee of the Sustainable Economic Growth Program ;
- Supervision of the implementation of an HACCP approach at the NIPAL company, through supervision of the work of a placement-student ;
- Canvassing of a number of big agribusiness concerns with a view to their joining the CAE quality program.

The contributions of the consultant (who represented the CAE at the various meetings) as the chair of the Cereals Commission, one of the discussion groups established for each commodity sector (by the Coordinating Committee of the Sustainable Economic Growth Program) made clear at an institutional level the firm commitment of the CAE to the goal of improved quality management for the whole of the agribusiness sector.

A first attempt at direct assistance to an agribusiness unit, which concerned the implementation of a quality assurance approach (the Hazard Analysis Critical Control Point (HACCP) method essentially based on the systematic identification of the potential dangers in a process) was successfully carried out through supervision of the work of a placement student at the NIPAL company. The results of this exercise can also be exploited as material for a practical case study in the training sessions already planned.

Agreement in principle has been reached on the participation of five large companies (for Mali) in the CAE quality program. These are :

- Koumalim – SA ;
- Grandes Confiseries du Mali ;
- Grands Moulins du Mali ;
- Société des Eaux Minérales du Mali ;
- Huicoma.

The intermediate results of this component of the program are considered to be satisfactory.

It is however recommended that in the second period of activity particular emphasis should be placed firstly on communications, to make the principal actors more aware of quality issues and their importance and to promote the approach proposed by the CAE, so as to bring a resolution of the most important problems; and secondly on bringing together institutional actors to consider the strategic questions of national quality management policy for the agribusiness sector.

### **3.3 – Support for business development and access to finance :**

#### ***Context and objectives***

During the first year of the project the principal constraints on the development of agribusinesses were identified, and these were of two kinds :

- the weakness of agro-entrepreneurs' management capacities ;
- difficulties in access to finance.

In the course of the first year, the CAE focussed its efforts in the field of business development on management training for agro-entrepreneurs to help improve their performance. In Year Two the accent fell on finance, without which the improvements witnessed within businesses could not be consolidated. And it appears, indeed, that the agribusiness sector, which represents 25% of GNP, benefits from only 3% of loans made by the entire banking sector, the principal source of finance for the private sector.

***Table III – 7 : Performance indicators for business development and access to finance***

<b>Intermediate Results</b>	<b>Operational Objectives</b>	<b>Baseline Indicator</b>	<b>Year 2 Indicator / Target</b>	<b>Result achieved</b>	<b>% achieved</b>
Develop businesses and facilitate their access to finance	Increase capacities of agro-entrepreneurs	-	10 businesses having developed a business plan and submitted it to banks	15 businesses have developed a business plan and submitted it to banks	150 %
	Improve agro-entrepreneurs access to finance	-	4 businesses having acceded to other sources of finance thanks to CAE	Two businesses working with APDF to increase plant size; four SSE funding applications completed ; proposal for CAE finance program made to SEG	More than 100 %

**Source** : CAE

This section gives an account of the activities carried out by the CAE with a view to helping agro-entrepreneurs gain access to finance. Different approaches were developed :

- Increasing the capacity of the support network
- The launch of the Business Support Services Program.

***Implementation and results achieved***

In the course of many interviews with bankers, the quality of business promoters and the poor presentation of loan applications were mentioned as the principal constraints which hinder agribusinesses' access to finance. This is why the CAE made efforts this year to establish an accelerated program to strengthen the support network for agribusinesses.

The goal of this program is to instill in the minds of enterprises the importance of the rules of good financial management so as to facilitate their access to bank credit, and to create a lasting and solid relationship between these businesses and the consultancies. These can help businesses draw up accounts and to establish balance-sheets, and to so to prepare applications that will help gain access to bank credit or other sources of funding.

The non-exhaustive table below gives an account of loan applications finalized or in the course of finalization through CAE support, and identifies the potential financial partners. One of the objectives of this project is to identify potential sources of finance and to promote the provision of credit to agro-entrepreneurs.

At present, several CAE-backed applications for finance are close to approval and in the course of the second year the CAE has mobilized its key partners in consultancy and finance and played a role as financial intermediary. In permanent contact with certain local and West African banks, the CAE has exploited the wide variety of support it offers and persuaded certain sources of finance to agree in principle to finance certain current projects.

***Table III – 8 : Summary of current projects (in Millions of FCFA).***

<b>Project Title</b>	<b>Estimated Cost of Project</b>	<b>Loan Amount</b>	<b>Status</b>	<b>Partner Bank</b>
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<b>COGETRAM/ Maize processing</b>	<b>66 363</b>	25 562	Completed and submitted to banks	Bank of Africa, Crédit Initiative S.A, BNDA
GDCM Rice Mill	1 225	650 000	Completed in partnership with APDF / Abidjan	BCS, BOA, Crédit Initiative S.A, SFI Dakar
Mini-Dairy	150 000	100 000	In discussion with OIKOCREDIT	OIKOCREDIT / Abidjan
Extension Modern Honey Processing	500 000	470 000	In discussion with OIKOCREDIT	OIKOCREDIT / Abidjan
Packing and grading of sugar peas	350 000	300 000	In discussion with OIKOCREDIT	OIKOCREDIT / Abidjan

<b>Project Title</b>	<b>Estimated Cost of Project</b>	<b>Loan Amount</b>	<b>Status</b>	<b>Partner Bank</b>
Extension, Dioro Rice Mill	2 000 000	1 000 000	Feasibility study to begin September. Partnership with APDF.	-
Fruileg, Cold Room	40 000	30 000	Study in progress. Completion expected in October	-
Self-managed warehouses/ COPAK	250 000	200 000	Study in progress. Finalization expected November	-
Poultry-Feed Production	200 000	170 000	Study in progress. Completion expected in December 2000	-
Marketing of meat and livestock	150 000	100 000	Study in progress. Completion expected in November	
Fruit and vegetable processing	70 000	5 000	Study in progress. Completion expected in December	
Production of potato chips	40 000	37 000	Study in progress. Completion expected in December	
Export of beef feet and red meat	35 000	30 000	Study in progress. Completion expected in December 2000	-
Sesame packing unit	125 000	100 000	Study in progress. Completion expected in December 2000	
<b>Total</b>	<b>4 277 588</b>	<b>2 782 562</b>		

**Source :CAE**

### **3.4 – Support for marketing (establishment of commercial relations) :**

#### ***Objectives***

Support in the establishment of commercial relations involves making information on opportunities for buying or selling available to Malian businesses, through domestic and sub-regional meetings, the investigation of markets, and use of the different communications resources available at the Center (the Internet and the Agro Mali site especially). The most notable activity in this field is the support provided to businesses for the organization of trade fairs and similar events.



## ***Results achieved***

### **1. Participation in the 2nd International Fair for Agriculture and Animal Resources (SARA '99) at Abidjan**

The CAE participated in the 2nd International Fair for Agriculture and Animal Resources (SARA '99), open to domestic, sub-regional and international exhibitors from the private, public, voluntary and institutional sectors.

The CAE's objectives in participating in and helping to organize this important event were :

- to make the CAE known in West Africa and in the rest of the world as a privileged partner in agricultural development policy in Mali. This was furthered by the launch of the CAE's communications plan in the course of the fair ;
- to promote South-South technical and commercial partnerships ;
- to promote quality assurance through technical support to small food-processing units ;
- to participate in forums and thematic symposia on agriculture and related activities.

The results expected were :

- the extension and diversification of the Center's range of partners (research center, information providers, equipment suppliers, importers etc.) ;
- stimulate the adoption of the quality approach from the lessons of SARA '99 ;
- the acquisition of information on new technologies ;
- participation in forums and symposia, with the reorientation if need be of the Center's activities in the light of the most significant results ;
- to participate in and influence ongoing discussion in the context of the sub-regional economic areas.

The CAE adopted two strategies to ensure that the agribusinesses it supports had a quality presence at the fair :

**The quality approach**, with the adoption of a set of criteria relating to quality control and the choice of agricultural produce for processing.

Assistance provided by the CAE in the field of quality related to :

- products (quality control) ;
- packaging (purchase of packaging meeting market requirements) ;
- labeling (design and manufacture of labels meeting minimal standards) ;
- technical data (advice on drawing up presentations for products) ;
- dispatch of samples.

In this way the SARA fair was an occasion to publicize one of the components of the CAE's program in the field of quality assurance and product promotion (Mali received the second prize for 'Creation of Value Added to Local Products' awarded by the CILSS).

In terms of results, a dozen food-processing units presented their products for sale. The great variety of the range (more than 30 types of product presented) attracted numerous visitors, who were able to make retail purchases. Overall, these products were well-received, and exhibitors did a good business in direct sales to visitors (more than 80% of product sold).

The Malian exhibitors were, however, much more absorbed in selling directly from their stands than in more professional goals such as the search for technical and commercial partners or discussion and exchange of experience with exhibitors and visitors from other countries.

### **2. Participation in the 2nd International Fair for Food and Food –Processing Industries and Technologies (SIAGRO) at Dakar**

SIAGRO-SOPIMAR (International Fair for Food and Food-Processing Industries and Technologies and West African Fisheries and Food Industries Fair) was held at Dakar from 20th to 24th June.

This event combined three different exhibitions :

- SIAGRO TECH, covering agricultural and horticultural equipment, food and food-processing industries and technologies, refrigeration, packaging, materials and techniques for ensuring food safety and quality, distribution and marketing;
- SIAGRO ALIMENTAIRE, covering agricultural produce in the raw or processed state; and
- SODIMAR, for the fishing industry.

#### **Results expected**

- extension and diversification of the Center's range of partners (research centers, information providers, equipment suppliers, importers etc.) ;
- consolidation of the approach, and the strengthening of agribusinesses through the exchange of experience etc.;
- the acquisition of information on new post-harvest technologies ;
- participation in forums and symposia, with the reorientation if need be of the Center's activities in the light of the most significant results ;
- consolidation of our businesses' approach towards sub-regional trade.

#### **3. The organization of a sheep fair at Tabaski : Operation TABASKI**

A promotional fair for the sale of sheep was organized by the Regional Chamber of Commerce at Mopti under the title «*spéciale Tabaski 2000*». It was supported by the CAE and took place on 4-16 March 2000.

The results of the operation are shown by the following statistics :

Participation	:	27 exhibitors
Duration	:	13 days
Total sheep presented	:	19 147 head
Total sheep sold	:	14 135 head
Average no. of sheep presented per day	:	1 472 head
Average no. sold per day	:	1 088 head
Lowest price	:	12 000 FCFA
Highest price	:	100 000 FCFA
Average price	:	30 000 FCFA

So great a success was this first venture, seen as an excellent business opportunity by all the sheep-rearers' associations which participated, that those involved are looking forward to repeating the experience through the establishment of a real 'sheep exchange.'

## SECTION IV

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### Improving the Agribusiness Environment

Sustained support to government institutions in their efforts to improve performance and to recover costs is an important element of CAE's strategy, as is analysis of the agribusiness environment and the development of regional trade.

The main tasks this year have been activities in support of the institutional strengthening of the *Institut d'Economie Rurale* (IER - Institute of Rural Economy) and of the *Laboratoire Central Vétérinaire* (LCV - Central Veterinary Laboratory). The goal of these activities is to enable these two organizations to operate on a more sustainable basis by generating greater internal resources.

The other aspect of activities to improve the agribusiness environment concerns the execution of feasibility studies, improvement of access to finance etc.

#### 4.1 – Improving the sustainability of government institutions in the agribusiness sector :

**Table IV – 1 : Performance indicators for improvement of the sustainability of government institutions in the agribusiness sector**

Intermediate Results	Operational Objectives	Baseline Indicator	Year 2 Indicator / Target	Result achieved	% achieved
To improve the sustainability of the IER and LCV	Develop a cost-recovery action plan for IER	-	% of businesses using information or services from IER	10 food processing units	Analyses carried out by LTA/IER for these units for SARA
	Reorganize the distribution circuit of vaccines for LCV	-	Vaccine sales volumes	Workshop held on a new system for distribution of vaccines	Activity continues, a recent meeting uniting all actors

**Source :** CAE

#### 4.1.1 - The Central Veterinary Laboratory (LCV)

The program in support of the LCV essentially involves :

- increasing profitability of the vaccine production unit through the development and implementation of an improved system of marketing and distribution ;
- the improvement of the management system through training and consultancy services.

Cost recovery and revenue generation have been the main targets of Center activities, with well-attended training sessions in business management, a study on improving vaccine distribution, followed by a workshop, and support for commercial promotion.

##### *4.1.1.1 - Strengthening of internal capacities : Context, objectives and results achieved*

The objective in the very short term of activities undertaken in this field is the production of a business plan for the LCV.

In the context of the institutional reforms undertaken by the Ministry responsible for Rural Development, a plan of action has been drawn up for the LCV, to be implemented in the course of a reorganization of the Laboratory. This reorganization is intended to separate the LCV into two operational units, with two separate sets of accounts.

At the end of the accounting period it will be necessary to consolidate the accounts of these units, and the CAE's support involves assistance with the consolidation of the accounts of the Vaccine Production and Marketing Unit. The successful implementation of the plan of action for the Vaccine Production Unit thus requires the development of a private enterprise management culture.

To prepare the LCV for this new situation, the CAE envisages a series of measures intended to strengthen the institution's internal capacities in the field of management. After the implementation of the first phase of the training program, the LCV and the CAE therefore began work on the preparation and finalization of a business plan. This plan is an indispensable tool for strategic planning and at the same time a management tool that allows an assessment of current circumstances and the development of future perspectives through the adoption of a particular methodological approach. A team has been appointed within the LCV which is to master the methodology and carry out the different tasks necessary for the successful execution of this activity.

To consolidate these measures, a study is currently being conducted whose object is:

- the provision of services which will assist in the execution of the business plan;
- the development and establishment of effective management tools in the form of a manual of administrative and accounting procedures.

#### **4.1.1.2 – Improving vaccine distribution channels : Context, objectives and results achieved**

The Center's main activity in relation to the Vaccine Production Unit essentially concerns the development of an improved vaccine distribution system. Two axes of intervention have been developed :

- support for participation in regional and national fairs ;
- the analysis of political constraints on the domestic distribution of vaccines.

With regard to the first, the LCV has been able to participate in two regional fairs thanks to CAE assistance. According to recent projections the LCV's target markets - or the projected growth of LCV's market share in the sub-region (Burkina Faso, Côte d'Ivoire, Guinea, Mauritania and others) - will have risen from 17 million doses of vaccine in 1996 to 36 million in 2000, which represents a substantial source of finance. On the basis of this analysis, it is now a matter of supporting any initiative that enables the reinforcement of the LCV's efforts in this direction and supporting the staff of the marketing unit in their role. The LCV has the material resources to respond to these necessities.

The LCV thus exhibited its range of vaccines produced in Mali at Abidjan (at SARA '99). The costs of its participation were entirely covered by CAE. The LCV already has a West African clientele, and this fair made potential customers aware of its capacities in the field of vaccine production.

A study was carried out on the distribution channels for vaccines sold by the LCV, and the conclusions discussed at a workshop chaired by the MDR. The principal actors in the vaccine subsector responded, and at the highest level (government services, private distributors, the veterinary profession, livestock farmers representatives and a big team from the LCV).

The study recommended the adoption of a new vaccine distribution system much closer to the private sector model, with a corresponding improvement in cost recovery.

All participants welcomed the initiative and thanked the CAE for its support in this sensitive area. This sensitivity was apparent throughout the discussions, as the interests of government services, private wholesalers, retail agents, stock-raisers and the LCV diverge widely.

Basic questions were raised about the forthcoming legislation, the fixing of prices, the advantages of current and alternative distribution systems, privatization and the role of the State, the market for

vaccines, the West African context, the role of different agencies, production costs etc. The workshop being unable to provide satisfactory answers to these questions, it was decided to appoint a working party of eight members, supported by the CAE and under the aegis of the Director of the LCV, to come up with proposals for dealing with these issues and others, if need be, and to communicate these to the Ministry.

The management of the LCV for its part has initiated a feasibility study on a Vaccine Production and Marketing Unit at the LCV which would be managed more or less according to private sector standards and methods. The general objective of the study is to determine the optimal conditions for the operation of the Unit, to assess the current situation and to study the technical, economic and financial feasibility of vaccine production without public subsidy at the LCV. This study and forthcoming decisions of the Board of Directors will have important consequences for the CAE's support in future.

If current progress is maintained, it can be expected that the Laboratory will in the coming years improve its financial performance in the vaccine field on condition that something is done about the slowness of decision-making about changes to be made at the LCV.

#### ***4.1.1.3 - Support to the LCV's Toxicology Unit***

The testing and analytical laboratories have a very important role to play in establishing and maintaining a quality assurance approach. The LCV's Toxicology Unit will make an invaluable contribution to this, through the testing of pesticide residues in agricultural produce – provided that the additional equipment, the necessary consumables, the training and accreditation are all in place.

In order that a better service might be provided to agribusiness, the CAE has initiated, with the officers of the LCV, the implementation of quality assurance for agricultural produce through improving the technical capacities of the Toxicology Unit.

The Toxicology Unit thus received assistance in the development of a joint action plan under which the CAE, from January 2000, would provide the services of an expatriate toxicologist who would propose a management plan and improvements to laboratory installations. The universities of the Integrated Pest Management – Collaborative Research Program (IPM-CRISP) and the IER and OHVN are all partners in the creation of a system of 'traceability' regarding the use of pesticides on exportable produce. The expected result of these conjoined efforts is a producer-oriented service providing criteria for the assessment of needs in the field which will assist in promoting quality production techniques for export produce.

To achieve this, on-going assistance will be provided through the CAE-LCV-USAID and VIRGINIA-TECH joint action plan, developed to ensure the reinforcement of the Toxicology Unit.

This action plan shared by the different partners, now in place, will permit the harmonization of activities by the different agencies (a group of US universities is already working within the framework of the IPM-CRISP program, financed by USAID-Washington to reinforce the technical capacity of the LCV's Toxicology Unit).

One of the central features of the action plan is the alteration or construction of the lab's premises. This is a priority, because nothing can be done of recognized scientific value unless laboratories meet safety standards and the conditions for accreditation. A study is currently being carried out intended to lead to proposals for adaptations to the premises which will then be submitted for funding.

One of the objectives of the action plan is the production of a working paper to serve as a basis for a national forum on quality assurance. Such a forum is expected on the one hand to help in harmonizing the activities of the different support services of the Malian government and on the other to determine which laboratory analyses are indispensable for certifying the quality of agricultural produce for export. This forum should lead to a better organized laboratory policy as a real and rational support for quality assurance.

To conclude, the goal of the CAE's intervention in this field is the implementation of a strategy which will enable, firstly, the provision of the support necessary to the full and effective operation of the LCV's Toxicology Unit, and secondly to ensure a recognized quality label for Malian export produce that is based on recognized certification.

#### **4.1.2 – The Institute of Rural Economy (IER)**

##### ***4.1.2.1 – Cost-recovery plan: Context, objectives and results achieved***

At the end of the first year a study was carried out to identify a strategy that would allow the CAE, on the one hand to provide the support necessary for the full and effective operation of various units of the IER, and on the other to ensure the provision of higher-quality services to agribusiness actors.

Following this study of the accounting system at the Institute, concrete proposals were made for improving financial governance and transparency at the principal income-generating centers. The proposal to establish analytical accounts to improve cost control and thus to make the national laboratories profitable was accepted by the IER. By making them more autonomous this will facilitate the determination of the direct and indirect costs of the laboratories and will allow profits to be made through the provision of services. Nonetheless, these arrangements cannot be put into general application in the short term given that most projects will not be immediately profitable.

In the meantime the IER has proceeded with the renovation and re-equipping of the laboratories, and a communications plan has been drawn up to assist in the dissemination of knowledge about its services.

The IER is also awaiting a debriefing meeting on the audit work commissioned from certain local consultancies. On this occasion the recommendations of the CAE study will also be considered, and the CAE's co-operation may be requested. The IER has already taken on board the recommendations as regards the use of central accounting software.

The CAE financed the Director of the Food Technology Laboratory's attendance at the Nairobi seminar sponsored by the World Bank on the financial sustainability of agricultural research institutions.

##### ***4.1.2.2 – Electronic archiving of research results: Context, objectives and results achieved***

The electronic archiving of the results of IER research, selected as a priority activity, has already begun.

The IER produces a great deal of research, whose results are not disseminated as effectively as might be wished. Despite the energetic reforms at the Institute, amongst which has been the establishment of a User's Committee, it has to be recognized that research results are under-exploited.

The CAE therefore proposes, through the provision of consultancy services, to assist the IER in improving its brand image through the exploitation of these research results.

The consultation should allow achievement of the following results :

- Research results will be identified for dissemination to the general public ;
- This information will be made available at the IER web site ;
- CD-ROMs with the results of the IER's research will be made available to users.

#### 4.2 – Promoting Regional Trade :

**Table IV – 2 : Performance indicators for the promotion of regional trade**

Intermediate Results	Operational Objectives	Baseline Indicator	Year 2 Indicator / Target	Result achieved	% achieved
Develop sub-regional trade	Inform and train actors re. UEMOA legislation	-	# of businesses with West African contacts thanks to CAE information or activity	10 businesses	CAE services most used by livestock traders
	Convergence of agribusiness policy (CILSS)	-	Establishment of monitoring unit for unlawful cross-border practices.	Preparatory study in progress	50%

**Source** : CAE

##### **4.2.1 – Identification of tariff and non-tariff barriers and promotion of regional trade**

##### ***4.2.1.1 – Establishment of a cross-border livestock market : Context, objectives and results achieved***

The CAE is involved in preparations for the establishment of the Cross-Border Livestock Market at Sikasso.

The National Forum on the Sikasso Cross-Border Market was held at Sikasso on 1-2 February 2000. The CAE will provide support to the bodies concerned in the course of the establishment and future development of this market.

The CAE took part in Forum in the context of the FERA/CILSS project on the establishment of cross-border markets, developed by the CILSS on the invitation of the FAO in 1996. The main objective of the Forum was to identify the main directional flows of exports and to define a role for the CAE in supporting the promotion of domestic and sub-regional trade in livestock products, through partnership with trade organizations in the sector. The National Forum on the Sikasso Cross-Border Market provides an appropriate place to :

- discuss the establishment and management of the cross-border market ;
- discuss the necessary communications system and the management of purchases orders and sales of animals ;
- discuss, with the exporters in particular, the way in which the Sikasso Cross-Border Market will operate.

The action plan which came out of this Forum should allow the CAE, in collaboration with its various partners, to determine the actions necessary for the promotion of the domestic and sub-regional livestock trade.

##### ***4.2.1.2 - Establishment of a Unit to Monitor Illicit Practices***

The CAE was given the task of harmonizing agricultural policies under the aegis of CONA/CILSS in Mali, and consequently reaffirmed its commitment to the establishment of a unit to monitor illicit practices in the regional livestock trade.



To this end, a launch workshop for the Unit 'to monitor illicit practices in cross-border trade in West Africa' was held under the aegis of the West Africa Forum (CILSS-UEMOA-CEDEAO-REAO), in which the CAE played an active role. The workshop brought together the member institutions of the West Africa Forum, and economic actors from Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger and Nigeria, as well as development partners, among them USAID.

The study of trucking in the central corridor of West Africa concluded that the transport system was for various reasons inefficient and made proposals for improvement, especially through the creation of the Monitoring Unit and the effective establishment of a free, open and competitive common market in the framework of the UEMOA and the West African Economic Community.

A study of the Monitoring Unit's pilot project on abnormal practices in cross-border trade assessed the condition of inter-State road transport and traffic in West Africa and proposed a scheme for the establishment of the Monitoring Unit as well as a standard questionnaire for the collection of data.

The goal of the Monitoring Unit is to ensure that it will be possible to obtain the desired goods in the desired place by an agreed time and at acceptable cost, in a context of transport liberalization and sub-regional economic integration.

In the course of the workshop, discussion of the program of work and options for the establishment of the Unit led to :

- the selection of the major orientations for the pilot phase ;
- the definition of the steps to be taken ;
- agreement on the means of disseminating the results of the Unit's work.

The importance granted to the data produced by the Unit will depend on their reliability and the credibility of the Unit itself.

In the meantime the CAE has drawn up terms of reference for a study on the start of the Monitoring Unit's activities as they relate to the Mali - Côte d'Ivoire trade. The goal of the study is to assemble a data base, and the results expected of the first phase are the development of a data base and the production of a report.

#### **4.3 – Sub-Regional Harmonization in the UEMOA Area :**

Activities related to :

- the preparation of an information seminar on the UEMOA. The first document is ready and preparations are continuing for this event to take place at the same time as the planned workshop on the agricultural commodity subsectors ;
- participation in the UEMOA Round Table on PASA, which concluded with recommendations for a common agricultural policy, in the development of which the CAE will be associated ;
- the publication of a special information bulletin on the UEMOA ;
- the visit to the CAE by the UEMOA Commissioner responsible for rural development and the environment.

A CAE team, made up of the Director and the Policy Officer, paid a visit to UEMOA headquarters in order to identify complementary activities and to define a framework for collaboration.

The objectives of the visit were :

- to introduce the CAE ;
- to become familiar with the UEMOA's current program of work ;
- to define a joint action program ;
- to clarify the modalities of collaboration between the CAE and the UEMOA Commission.

A strong complementarity having been recognized, the possibilities envisaged relate to collaboration with the CAE as a focal point for certain activities.

The visit paid to the UEMOA Commission succeeded in identifying complementary activities, and the CAE is ready and willing to act as a partner to the Commission, without prejudice to existing agreements or arrangements. The Project's flexibility allows the introduction of new elements into its program whenever it might be necessary in order to arrive at a joint program regarding the matters discussed. The shared objective is a significant modernization of agribusiness.

#### **4.4 – Regional Consultations on Quality Assurance :**

The CAE took part in the regional seminar on food security in Africa organized by the World Bank at Dakar on January 24-26 2000. The CAE contributed to preparations for the meeting by helping coordinating the efforts of the public and private sector partners concerned. This involved covering expenses for certain participants, the production of a communication from Mali on the problem of quality control, and the presentation, in the course of the seminar, of publicity material for the LCV's Toxicology Unit.

The CAE also took part in the '10th Quality Conference' organized by the ABECERQ<sup>3</sup> at Ouagadougou on 17-21 July 2000, also financing the participation of the AMAQ<sup>4</sup> and three Malian businesses.

This trip allowed those who took part to :

- draw inspiration from current experience of the introduction of quality assurance in certain industrial enterprises, centralized state services and service providers in Burkina ;
- consolidate their theoretical and practical grasp of quality management in business ;
- better understand the challenge represented by the continuous striving for quality as part of the growth strategy for a business.

#### **4.5 – Strengthening the private sector :**

##### **Table IV – 3 : Performance indicators for the strengthening of the private sector**

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<sup>3</sup> ABECERQ Association Burkinabe des Cercles de Qualité

<sup>4</sup> AMAQ Association Malienne pour the Qualité

<b>Intermediate Results</b>	<b>Operational Objectives</b>	<b>Baseline Indicator</b>	<b>Year 2 Indicator / Target</b>	<b>Result achieved</b>	<b>% achieved</b>
Improve political and economic environment of agribusiness sector	Identify institutional, political and regulatory constraints	-	2 constraints identified	3	150%
	Increase private sector participation in dialogue	-	% businesses taking decisions following CAE forums	50% of Malian agribusinesses in formal sector	More than 100%

**Source** : CAE

#### **4.5.1 – The Investors’ Round Table :**

With the aim of launching a strategy for the continuous stimulation of agribusiness, and at the same time to identify the main axes of collaboration between the project and operators active in the sector or potentially interested in investing in it, the Center organized on 18th November 1999 a round table for investors in the agribusiness sector.

This meeting, which brought together private economic operators and staff from support services and public-sector bodies, took place under the patronage of the President of the Mali Chamber of Commerce and Industry.

Its purpose was to make participants more aware of the potentialities of the agribusiness sector and to explain to them the different kinds of support that the CAE could offer in the framework of its promotion of investment in agribusiness.

The round table provided an opportunity to discuss the potential of the sector and the principal constraints on investment in it.

These discussions covered :

- **potential** : the *Office du Niger* zone in terms of rice-growing, stock-raising and market-gardening, the importance of the national herd, citrus in the environs of Bamako and the Sikasso region, karite nut [or shea tree] butter and peanuts as products offering substantial investment opportunities ;
- **constraints** : insufficiency or non-existence of own funds and of security for loans, the poor quality of loan applications presented to the banks, difficulties in banks' recovering client debt, which makes them even more nervous of the sector, the nature of the commercial relationship between importers and exporters (in the case of fruit exporters) ;
- **promoters** : inadequate managerial and management capacity on the part of agro-entrepreneurs, and lack of professionalism of most operators ;
- **infrastructure** : high cost of such factors of production as energy, inadequacy of storage and processing infrastructure, transport costs ;
- **the role of the state** : inadequacy of privatization procedures in terms of administrative burden ; a legal environment discouraging to the growth of business, in terms of both law and procedure; excessive administrative requirements at the borders, the lack of a proper land tenure policy ;
- **the market** : commercial information, difficulties in placing products, difficulties in meeting demanding international standards.

Recommendations were made relating to a feasibility study for a livestock feed production unit initiated by the Center, the involvement of the Center in animal health, conservation and marketing in order to improve the quality of meat and dairy products, and finally on the Center's involvement in the strengthening of trade associations.

As regards the cereals subsector, the Center was asked to do something about wheat, and in the fruit and vegetables subsector further recommendations were made in relation to a feasibility study on fruit-juice production facilities and a study on the oils subsector.

In addition to these recommendations for particular commodity subsectors, other proposals were made, amongst which one could mention :

- greater involvement of private sector actors through the formation of a pressure group;
- the encouragement of a spirit of partnership and mutual assistance between economic operators ;
- strong involvement of the CAE in the emergence of joint ventures in agribusiness with professional partners ;
- better organization of the business environment ;
- better co-ordination of the activities of the various support organizations so as to avoid duplicated or unnecessary work ;
- a CAE guarantee for agro-entrepreneurs' export operations carried out with foreign partners.

The Investors' Round Table raised awareness of many issues and improved relations between the different kinds of participant. Since then the CAE has continued to conduct or to initiate activities in pursuance of the majority of these recommendations.

#### **4.6 - Identification of institutional, political and regulatory constraints :**

##### **4.6.1 - Study on the revision of legislation concerning the export trade in fruit and vegetables**

This activity corresponds to two objectives laid down in the Center's program of work and is essentially intended to increase the capacities of private-sector interest groups. It involves the identification of policy issues and the production of an orientation document.

A series of discussions with state services and fruit and vegetable exporters led to an assessment of the legal framework that governs the export of fruits and vegetables. It emerges from this that the legislation governing the export trade in fruit and vegetables includes legal possibilities which could redound to the advantage of exporters. Ignorance of the legislation, inadequacies in its application, and the numerous difficulties which operators confront probably require the revision of the law.

To do this, the CAE organized a consultation whose purpose was to develop a critical analysis of current legislation so as, firstly, to bring out the constraints connected with its application and, secondly, to propose amendments which would lead to simplification and long-term effectiveness.

The first phase of this work will involve the production of a compendium of relevant legislation intended to familiarize CAE staff with the legal environment in which its customers and partners are currently operating. These materials will then be used as the basis for a meeting of the various players, whose purpose will be to provide exporters with more information on the institutional context in which they are operating, and in particular to clarify the conditions governing their access to the legal advantages available.

A working document with the consultant's critical analysis of current legislation will also be discussed at the Forum, with a view to the formulation of proposals for revision.

##### **4.6.2- Study for the Development of an Action Plan for Policy for the Promotion of Agribusiness Subsectors**

On behalf of the Ministry of Industry, Trade and Transport, the CAE has begun a study for the development of an action plan for a promotion policy for agribusiness subsectors.

Despite the implementation of a policy of wide-ranging economic reform, Mali has problems in improving competitiveness.

This observation has led the Government to envisage a policy more oriented towards increasing value added to raw materials in such a way as to mitigate fluctuations in export income and to make resources available for greater diversification of productive resources.

Achievement of these objectives requires the definition and implementation of a policy for the development of agribusiness subsectors, leading to the improved organization of production, processing and marketing of products and services.

To give effect to the Government's directive in the matter, the Ministry of Industry, Trade and Transport has initiated a number of discussions and consultations which have led to the development of an action plan for policy for the promotion of agribusiness subsectors in Mali.

The goal of the Action Plan is to allow the identification of investment opportunities and their promotion to potential investors.

Given the inadequacies revealed by the examination of the action plan document, the Ministry decided to carry out a further study with CAE support, so as to improve this first version of the action plan in both form and content, with a view to its endorsement by relevant actors (private, public and parastatal) and its presentation to the Government.

The goal of the study is to reformulate the original document so as to provide :

- an assessment of the current situation and prospects for development in each agribusiness subsector ;
- a more highly developed action plan ;
- a definition of objectives for the promotion of the subsectors concerned.

The document-based review of agribusiness trade associations planned for this year has not yet begun. The measures required will be identified by a diagnostic study. The associations' requirements for support will be identified in terms of the services they offer to members.

#### **4.7 CAE Communications :**

Activities in the field of communications this year have concerned :

- the development of a communications strategy to improve the Center's visibility ;
- improvement of information flow within the CAE.

In the implementation of the communications strategy the following actions were carried out :

- drafting of a communications strategy document ;
- drafting and dissemination of publicity materials for the Center (prospectus, information folder, posters) ;
- participation in trade fairs (SARA 99 at Abidjan, two local fairs and SIAGRO 2000 at Dakar) ;
- organization of workshops to present the Center's activities ;
- organization of media campaigns in the context of certain activities (launch event for the high-quality rice trial, promotional documentary on mangoes).

Another major element in the visibility of the CAE is its web site, which has made it possible to rapidly and effectively provide the Center's partners with information on technologies and commercial outlets.

The final objective behind all these communications efforts is to get across the CAE's message. Thanks to different kinds of activity in this field, agribusinesses are more aware of the CAE's mission, its objectives, interests and sectors of intervention. The first steps have been taken towards improving information-flow within the Center itself through the organization of workshops and internal meetings.

#### **4.8 – Reflections on the financial component of the Center :**

##### **4.8.1. - Establishment of an internal funding program within CAE**

The difficulties encountered by agribusinesses in access to credit have led the CAE to consider the possibility of establishing its own funding program which would allow it to take an active part in financing the agribusiness sector. The CAE would thus play a catalytic role that might encourage local banks to become involved in the sector. The sum envisaged would amount to \$ 1 million, taken directly from the Partnership Fund budget, intended to finance trials through the placing of sub-contracts.

A document outlining different options was sent to USAID for approval. The options proposed were as follows :

- Funding of pilot projects through the entire cycle – 100% ;
- Risk-sharing with a local bank – 50% ;
- Provision of starting capital – 100% ;
- Grants and subsidies to strengthen trade associations – 100%

This program segment is intended only as a short-term measure that will not outlast CAE's own intervention. It nonetheless represents a necessary precondition for the development of the external funding program (involving local banks) required to ensure the sustained impact of the CAE's interventions.

It involves all those activities undertaken so that banks, investors and partners lend or invest more in the agribusiness sector.

##### **4.8.2. - Information on sources of finance**

To ensure that agribusinesses are better informed about potential sources of finance the CAE has :

- Published a brochure on “Sources of Finance in Mali : The Case of Agribusiness”;
- Organized a seminar at Bamako on West African sources of finance for promoters and service-providers, in collaboration with OIKOCREDIT, an international financial institution based in Abidjan ;
- Organized a seminar on West African sources of finance at Ségou and Sikasso, for consultancies, independent consultants and accountancy firms (40 participants) ;
- organized a seminar for consultancy firms, in collaboration with OIKOCREDIT, on drawing up applications for submission to OIKOCREDIT.

#### **4.8.3. - Partnership with local banks**

Contact was made with the General Secretary of the *Association Professionnelle des Banques et Etablissements Financiers* (APBEF) with a view to exploring the possibility of partnership between the CAE and APBEF members – the local financial institutions. A meeting is planned for the very near future between the CAE and the chief executives of the banks.

Dialogue with banks and financial institutions at Bamako, Ségou, Sikasso, Koutiala and Niono has been strengthened through regular working meetings. Discussions have been particularly focussed on the CAE's SSE (Business Support) program and its importance for businesses and banks, and on credit applications both finalized and still in the pipeline.

#### **4.8.4. - Partnership with West African financial institutions and others providing financial support**

Collaborative relations between the CAE and the major West African banks have been further strengthened this year with frequent visits by the latter to the CAE, and discussion of certain credit applications. Following the contact mission to Lomé, Abidjan and Cotonou, certain institutions have now established or are in the process of establishing partnership relations with CAE. These are :

**APDF** : A real partnership has been established between the CAE and the APDF (African investment-promotion department), which has led to several visits to/by APDF/Abidjan. A feasibility study has been finalized in partnership with the APDF, and a study on the extension and renovation of another rice mill will begin in September.

**OIKOCREDIT** : an international financial institution whose regional office for French-speaking Africa is based in Abidjan, whose goal is to combat poverty through the provision of finance in the form of loans (of between 100 and 600 million FCFA) to disadvantaged groups that have profitable projects in mind. Representatives have visited CAE several times to lay the basis for partnership and to discuss certain loan applications. Four such applications were discussed with OIKOCREDIT staff during their last visit, and these are to be put before the meeting of the OIKOCREDIT loans committee planned for September 2000 at Abidjan. The CAE will be present at this meeting to argue for these applications and to explain the consequences for the Malian economy of financing these projects.

**PUFS** : The CAE has had several working meetings with the *Projet d'Utilisation du Fonds Suisse*, based at the BOAD, in order to discuss applications in the pipeline that might be financed by the PUFS. A seminar to disseminate information on West African sources of finance is to be jointly organized with the PUFS.

**CAURIS INVESTISSEMENT S.A.** : An active partnership is in the process of being established between CAE and Cauris Investissement, leading to a visit by a senior CAE officer.

#### **4.8.5. - Establishment of an external funding program**

CAE is currently collaborating with USAID on the establishment of a Micro and Small Enterprise Development (MSED) program in Mali. Once this has been set up, the program will ensure that access to credit for SMEs and SMIs is ensured in the long term.

The program involves the provision in Mali of a guarantee fund (of up to 50% of capital advanced) available to banks which meet the criteria of the MSED program. This program, run at USAID level, is targeted at the financing of a given sector. The CAE, working in the agribusiness sector, will be able to take advantage of it to encourage the provision of funding for its customers. This means of supporting access to credit will continue long after the closure of the CAE, with the program continuing its operation under USAID auspices.

The total amount guaranteed might range between \$500,000 and \$3,000,000. The maximum guarantee will not exceed 50% of the loan, and guarantees ranging from \$5,000 and \$150,000 will support loans of \$10,000 to \$300,000.

#### **4.9. - Identification of conditions for the creation of a food - packaging purchasing group**

The agricultural sector has an important role to play in the economic development of Mali, and the food industry should provide agriculture with an important outlet, but the development of such businesses runs up against major obstacles, amongst which are :

- the lack of suitable infrastructure ;
- the inadequacy of institutional and regulatory arrangements ;
- problems related to storage and packaging.



The success of food processing in Mali will depend, to a great extent, on solving the problem of packaging.

One of the principal problems is the ignorance of technological innovations and investment opportunities in packing and packaging. As a result, there are problems with the following aspects :

- local availability of suitable packaging ;
- information on the possibilities of packaging supply ;
- quality of packaging and product ;
- price of packaging and product ;
- labeling and marketing concept ;
- acquisition of new technologies (choice and cost in relation to target market) ;
- etc.

Mali has very few packaging production companies, production volume is low and the range of packaging available is restricted, hence the widespread use of unsuitable packaging. Packaging is not properly playing its double role as container and marketing tool, and the brand image of Malian-processed products is suffering as a result.

Furthermore, Malian agribusinesses' very limited financial capacity, the non-productive nature of artisan technologies, the low production volumes and the modest purchasing power of consumers militate against the import of food packaging materials that meet accepted technical standards.

In order to assist in removing these constraints, a study was carried out by the CAE in the second quarter of 2000, entitled *Identification of conditions for the creation of a food- packaging purchasing group*.

The study provides answers that help clarify the problems, and puts forward concrete proposals that will hopefully contribute to meeting certain major concerns.

### ***Areas and sectors concerned and resources mobilized***

Areas covered by the study were the district of Bamako and the regions of Ségou, Sikasso and Mopti. Sectors concerned were the processing of cereals, fruit and vegetables, meat products.

The study was carried out by Yiriwa Conseil and took six weeks.

### ***Results achieved***

More specifically, the results of the study related to :

- estimation of packaging requirements for micro and small enterprises ;
- development of proposals for harmonization and improvement of packing techniques ;
- analysis of the feasibility of a joint purchasing organization for packaging, under the headings: justification, legal and organizational frameworks, market analysis, mode of operation, financial analysis of profitability, discussion of probable risks.

### ***Conclusions***

To carry forward the recommendations of the present study and to determine the measures that can be sustained in the long term by the CAE, the following steps require to be taken immediately and/or in the medium term :

- the organization of an external validation workshop to hear the observations of beneficiaries (a group of food processing enterprises and other organizations which contributed to the realization of the study) ;
- the study provides a basis for discussion with other partners (SEG, APROFA, DEFSAM, PROCELOS etc.) also concerned with improving packaging ;
- definition of the resources to be committed by CAE, to be quantified in terms of the requirements laid out in the financial section of the study.

## SECTION V

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### FINANCIAL RESOURCES

#### 5.1 – Expenditure :

Budget for Fiscal Year 1999-2000									
BUDGET			Fiscal Year 1999-2000	FY 99 QTR 4	FY 00 QTR 1	FY 00 QTR 2	FY 00 QTR 3	YEAR 2 Total Expenses	Total Expenses
CLIN 1	Ag. Bus. Dev.	9 335 367,00	2 167 725,39	619 628,73	633 968,52	651 419,59	229 854,95	2 134 871,79	4 302 597,18
CLIN 2	Info & Comm	2 414 828,00	234 958,39	59 941,24	64 721,62	44 307,14	15 073,13	184 043,13	419 001,52
CLIN 3	Policy & Reg.	1 947 870,00	71 574,37	36 345,24	37 192,29	18 021,02	4 667,02	96 225,57	167 799,94
CLIN 4	M & E	394 307,00	57 769,81	16 898,33	11 624,15	6 941,14	2 779,63	38 243,25	96 013,06
CLIN 5	Eq., Veh. & Fr.	536 865,00	517 640,66	50 986,44	3 205,12	84 281,14	8 321,47	146 794,17	664 434,83
CLIN 6	Training	374 264,00	37 873,41	39 913,81	20 745,11	15 404,39	7 979,00	84 042,31	121 915,72
15 003 501,00			3 087 542,03	823 713,79	771 456,81	820 374,42	268 675,20	2 684 220,22	5 771 762,25

Source : CAE

## 5.2. - The Partners Fund :

The Partners Fund was designed to support and facilitate CAE sub-contracting to partners such as consultancies, service providers, NGOs and economic interest groups. These partners must be capable of providing a quality service and of taking over responsibility for, or ensuring the continuation of, activities initiated by the Center in such a way as to ensure their sustainability. The Fund is therefore a tool for the stimulation and consolidation of the supply of quality services to Malian agribusinesses. It has proved invaluable to the CAE in attaining a number of its objectives.

For the financial year just ended, total expenditure from the Partnership Fund amounts to \$372,445, on 13 sub-contracts.

The table below shows the breakdown by fields of activity :

	Amount	%
Studies	133 210	36%
Training	68 180	18%
Demonstrations/Tests	79 507	21%
Pilot Project	91 548	25%
<b>TOTAL</b>	<b>372 445</b>	<b>100%</b>

Source : CAE

It appears from these figures that if the financial requirements for studies and training, represent 54% of PF resources utilized in Year 2, those related to technical demonstrations/tests and pilot projects are growing, and now represent 46% of funds used.

This mechanism has effectively facilitated the funding of studies, training, technical demonstrations (of new techniques or new products) and pilot projects. It should also be emphasized that this mechanism of sub-contracting and partnership has also improved the capacity of consultancies, associations and NGOs to offer quality services to Malian agribusinesses.

Despite these advantages, however, certain limitations have become clear.

For the PF to fully play its development role and to meet the expectations of beneficiaries and partners, the initial objective of the Fund needs to be extended beyond commercial sub-contracting, so that the Center has the resources to underwrite the provision of a wider range of support that will also cover the need for finance and the strengthening of institutional capacities.

If access to the Partners Fund were eased (by permitting the issue of small grants and loans, for example) CAE would be better able to optimise the potential of its different partners in the sector, for support activities, strengthening/consolidation or development, and thus create and maintain real growth and a more effective private sector.

## SECTION VI

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### **MONITORING AND EVALUATION OF WORKPLAN ACTIVITIES**

Monitoring and evaluation in Year 2 entailed the following activities :

- the development of a global monitoring and evaluation strategy for Center activities ;
- regular monitoring of activities (subsector development, training, studies etc.) ;
- participation in consultation for the validation of monitoring and evaluation strategy ;
- conduct of basic surveys (one at the beginning of the year to establish baseline indicators and the second for the final evaluation of the year.

#### **6.1. -Development of the monitoring and evaluation strategy :**

So as to be able to monitor activities and make a coherent evaluation of their impact, a strategy document was developed. The topics covered by this document are as follows :

- the Center customers' management strategies ;
- strategies for the regular monitoring of activities ;
- evaluation of the impact of activities through surveys of customers.

The strategies proposed in this document were implemented following a phase of consultation with the Center team.

#### **6.2. - Regular monitoring of activities :**

All Center activities were subject to continuous monitoring.

In the case of commercial development activities, monitoring took the form of meetings with members of the technical team so as to provide them with an update on activities, to gather information on performance indicators, to discuss issues arising (delay in execution, short-fall in relation to objectives) with staff and to proceed to the production of statistical tables and/or figures so as to summarize quarterly activity reports through the construction of tables showing changes in performance indicators.

Standard record sheets were produced in consultation with various specialists so as to facilitate the collection of data. These have helped in the construction of data-bases. Data collected related to customers, support organizations, market information, areas and levels of production, policies, etc.

Training sessions were monitored and data collected on training and post-training participants' field of activity, full address, sex, module, expenditure, location, names of trainers. These data were entered on a data-base designed for the purpose.

#### **6.3. - Participation in the validation of the monitoring and evaluation mechanism :**

After the monitoring and evaluation mechanism had been in operation for some time, it became clear that it required validation, and if need be strengthening to make it more effective. Thus it was that a consultation process was commissioned, a specialist being engaged to validate the Center's monitoring and evaluation mechanism. Following this consultation, proposals were made for improvements to the record sheets, to the use of the data base, and to implementation. Furthermore, the very concept of monitoring and evaluation, which had not been properly understood by the great majority of technical staff, was clearly explained. Consequent upon certain observations, the consultant proposed a reorganization of the Center.

#### **6.4. - Evaluation of the impact of activities (basic surveys) :**

Within the framework of monitoring and evaluation, it was planned to carry out two surveys of the Center's customers and partners in the course of the year. The principal goal of the first survey,

covering the period October 1998 to December 1999, was to establish baseline indicators for the purpose of the end-of-year global evaluation. More specifically, this survey allowed :

- the determination of exporters' opinions of the test-marketing of mangoes in Germany and Great Britain ;
- the evaluation of the impact of support for agribusinesses' attendance at trade fairs and similar events ;
- the determination of customers' opinions on the relevance and quality of training provided by the Center ;
- the determination of subscribers' opinions on the various publications of the IU ;
- the evaluation of CAE support to institutions (LCV, IER, ON).

It also allowed us to judge the relevance of activities in the publication of information, training, and institutional support.

The second survey, whose results are reviewed in this document, allowed an evaluation to be made of the whole of the Center's activities over Year 2.